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INCLUDING

CEYLON AND BURMA.

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COLEOPTERA.

CARABIDÆ

VOL II—HARPALINÆ—I

BY

H. E. ANDREWES.



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AUTHOR'S PREFACE.

SIX years have elapsed since the publication of my first volume on the CARABIDÆ of India, and, as this second volume follows on the same lines, there is little to add here by way of introduction I have once more to thank the same friends and museums for assistance in the preparation of my work, and there are several new names to add to the list, chiefly in connexion with the three recent expeditions to the Karakorum Mountains, viz., those of Dr. G. Evelyn Hutchinson of Yale University, Mr J. B. Corporaal of the Amsterdam Museum, Dr. A. Gridelli of the Trieste Museum, Dr. B. Parisi of the Milan Museum, and Dr. L. Caporiacco of the Zoological Institute, Florence

The figures in the coloured Plates I to III were painted by Miss Olive F. Tassart, and nearly all the text-figures in the genera *Bembidion* and *Tachys* are due to Miss B. Hopkins; to these artists I offer my sincere thanks for their valuable help Coloured Plate IV has been prepared from the two first plates in my work on the CARABIDÆ in Mr Guy Babault's 'Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914,' and I am grateful to him for permission to make use of the figures required for this volume I am also much indebted to Dr R. Jeannel, who has entrusted me with a number of the drawings which illustrated his "Monographie des Trechinæ" (Abeille, xxxii-xxxv, 1926-30), and allowed me to reproduce them here. In addition I must thank, (i) Dr. Bolívar y Pieltain of the Madrid Museum for permission to introduce five drawings (text-figs 1 to 3, 35, and 36) from a paper of mine which

appeared in vol III of 'Eos,' 1927, (ii) the editors of the 'Entomologists' Monthly Magazine' for allowing me to make use of some of the figures in the plate which accompanied my "Notes on Oriental Carabidæ—VII, 1925," and which appear here on Plate V, (iii) Dr Gridelli for the photograph of *Bembidion ajmonis*, which appeared in Dr F Netolitzky's paper on the Bembidiini of the Italian Karakorum Expedition, and which is reproduced here as text-fig 22, and (iv) the editors of 'Indian Forest Records' for allowing me to make use of the figure of *Tachys salemus* (text-fig 44).

I have, further, to express my obligation to the editor, Lt -Col R B Seymour Sewell, F R S, for the careful way in which he has been through the proofs and detected various discrepancies and inaccuracies which might otherwise have escaped notice.

The Glossary of Technical Terms which appeared in my first volume has, for convenience, been reproduced here, and, as before, a folding-map of India, Ceylon and Burma appears at the end of the volume. For the spelling of the names of the localities mentioned the Indian Postal Guide has once more been taken as the standard of orthography.

H E ANDREWES

September 1935

GLOSSARY OF TECHNICAL TERMS.

(Names of the parts of the body explained in the diagrams and in the text of the Introduction to Vol. I are not included here.)

δ indicates the male, φ the female

- Acerular**, having a sharp point like a needle
Acuminate terminating in a point
Adnate closely attached to (used of the paraposses)
Penis the intromittent organ of the male
Analis bristly
Alutaceous with a surface resembling that of soft leather
Anal relating (in insects) to the apex of the abdomen
Aper, that part of the body, or of a limb or appendage of the body, which is most remote from an imaginary line separating the pro thorax and hind body
Appendage, organ attached to the body externally.
Apennine without wings
Bent like a bow.
articulation, a joint
asperate rough
Attenuated, diminished gradually

Base, that part of the body, or of a limb or appendage of the body, which is nearest to an imaginary line separating the prothorax and hind body
Bicarpid, with two carps
Bifid cleft into two
Bordet, an edge or rim, raised a little above the adjoining surface

Canaliculate, with one or more channels
Carina a keel or narrow raised line
Catenulate, in the form of a chain (used of the primary intervals of *Carabus*, etc.)
Cerci, the two appendages on the tenth abdominal segment (larva)
Chitin, the substance of which the horny integument of Coleoptera and other insects is chiefly composed
Ciliate fringed with a row of more or less parallel hairs

- Clavate*, terminating in a club
Compressed, flattened as if by lateral pressure
Concolorous, of uniform colour.
Condyle, the rounded process at the end of a joint, moving in a socket
Confluent, running into one another
Connate, soldered together.
Constricted, contracted as if by pressure from all sides
Contiguous, adjoining.
Cordate, heart shaped
Coraceous, with a surface like that of leather
Cornaceous, horny.
Costa, a rib or raised line, not so narrow or sharp as a *carina*
Cotyloid cavities, the sockets in which the coxae move
Crenate, Crenulate, with a notched edge
Cusp, a projecting point
Cyanous, of a dark blue colour
Cyathiform, in the form of a wide-mouthed cup (*e.g.*, the prothorax in *Stagona*)
- Declivous*, sloping downwards
Decurrent, extending downwards
Deflexed, bent downwards or aside
Dehiscent, gaping apart
Dentate, toothed
Denticulate, furnished with small teeth
Depressed, flattened as if by vertical pressure
Digitations, the finger-like processes on the tibia of the Scaritini
Disk, the central portion
Distal, away from the centre of the body or point of attachment
- Ectenate*, without teeth
Emarginate, notched or with the margin as it were removed in the form of a segment of a circle
Epicranium (Epicranial), the dorsal region of head behind clypeus (larvæ)
Eusternum, the anterior of the two main thoracic sternites (larvæ)
Explanate, flattened out
Extrovert, turn inside out.
- Facets*, the lenses or divisions of the eye
Facial carina, Facial sulcus, the carina and the sulcus on each side of the head in the subgroup *Clivinides*.
Facies, general aspect of a species, group, etc
Fascia, a broad transverse band
Ferruginous, rust-red
Filiform, thread-like
Flavous, yellowish
Forea, an impression, larger than a puncture, frequently rounded
Frontal plate, the convex part of the head between clypeus and eye in the subgroup *Clivinides*

Fulvous, of a tawny yellow colour

Fuscous, very dark brown, almost black.

Fusiform, spindle-shaped; tapering at both ends

Genuculate, elbowed or abruptly bent (applied to the antennæ, when the first joint, or scape, is much longer than the others)

Glabrous, smooth, hairless, and without evident sculpture

Granulate, covered with small round elevations (granules)

Gula, the throat or submentum, that part of the head immediately behind the mentum and buccal fissure

Hirsute, furnished with long and frequently erect hairs

Humeral, relating to the shoulder

Humeral ridge, a short raised line crossing the shoulder obliquely (*Siagonini*)

Hypostoma, lower region of head below the mouth (larvæ)

Imbricate, overlapping one another, like the tiles of a roof (e.g., the scale-like formation on the elytra in the genus *Calosoma*)

Impunctate, without puncturation

Insertion, point of attachment (especially of the antennæ)

Instar, a stage in metamorphosis between two moults

Interspaces, a term used by some authors with the meaning here attributed to intervals

Intervals, the spaces between the striae or rows of punctures on the elytra, these are numbered from the suture outwards, the first (sometimes called the sutural interval) being that lying between the suture and the first stria

Iridescent, exhibiting colours like those of the rainbow, changing in different lights

Joint, a word properly meaning an articulation, but commonly (and here) used for the various segments into which some appendages of the body are divided, e.g., the palpi, antennæ, and tarsi

Lateral grooves, deep longitudinal furrows on each side of the prothorax (*Siagonini*)

Lateral ridges, carinae running along the sides of the head (*Siagonini*)

Maculate, spotted

Median, central

Membranous, of the consistency of parchment

Mental, referring to the mentum

Mesolabrum, median lobe of the labrum (larvæ)

Meso-, see Pro-

Meta-, see Pro-

Microsculpture, the minute structure of the integument

Moniliform, like a string of beads (usually applied to the antennæ)

Mucronate, terminating in a mucro, or sharp spine

Notum, dorsal aspect of a segment of the body Hence *pro-*, *meso-*, and *metanotum*, referring to the three thoracic segments

Obsolete, almost effaced

Ocellate, furnished with round spots, surrounded by a ring of a darker colour

Ocelli, simple, as opposed to faceted or compound eyes

Orbital, relating to the upper margin of the eye

Oval, elliptical, equally pointed at the two ends

Ovate, egg-shaped, more pointed at one end than at the other

Pectinate, toothed like a comb

Pedunculate, having a *peduncle*, or supporting piece, joining one part or organ to another, e.g., the produced part of the mesothorax in the *Sciaridæ* and *Sarcophagidæ*, which fits into the base of the prothorax

Piceous, of the colour of pitch, very dark brown

Pilose, *Piliferous*, *Piligerous*, bearing one hair, or a number of hairs

Pleuron, lateral region of the body, connecting tegnum and sternum

Pliata furnished with a fold or folds (*plixa*)

Pores large, isolated punctures

Projecting projecting forwards

Primary, a term applied to the three principal intervals, which are often catenulate in the genera *Carabus* and *Calosoma*. An interval or the central one of three intervals lying between two primaries is called a *secondary* interval, one placed between a primary and a secondary is known as a *tertiary* interval. The term *quaternary* interval is sometimes given to rows of minute granules lying between the other intervals

Pro-, *Meso-*, and *Meta-* refer to the first, second, and third segments of the thorax or organs connected with them, e.g., *prosternum*, *proepisternum*, *proepimeron*, *procoxa*, *protochanter*, *profemur*, *protibia* and *protarsus*. Similarly, *mesosternum* etc. and *metasternum* etc. (The term *metatarsus* has been applied to the first joint only of the tarsi of the hind legs, but is here used of the whole tarsus.)

Process a projecting part, outgrowth

Produced extended, continued

Protelson a small region in front of the telson

Proximal, situated towards the centre of the body, or point of attachment

Pubescent, furnished with a clothing of soft hairs

Puncta accessoria minute granules on the front of the ventral region (larvæ)

Punctate-striate, bearing lines of punctures placed in narrow grooves

Puncture an impressed point usually round

Quadrata more or less square

Quaternary, see *Primary*

Reflexed, bent upwards

Reticulate, covered with a network of very fine striae, which form meshes of varied shape

Rufous, reddish

Rugose, with a rough surface

- Scape**, a term applied to the first antennal joint, when unusually developed
- Sclerite**, local area of *chitinous*ization of the cuticle
- Scribe**, the wide groove on the outer side of the mandibles (*Carabidae*)
- Scutellary**, near the scutellum
- Secondary** see *Primary*
- Securiform**, hatchet-shaped.
- Segments**, the divisions of the insect body (here applied chiefly to the venter)
- Serrate**, with teeth like a saw.
- Seta**, a stiff hair
- Setose, setiferous, setigerous**, bearing a seta or setæ
- Shagreened**, microscopically roughened and producing a dull effect
- Sinuate**, wave-like, curved first in one direction and then in another
- Sinus**, a cavity or indentation (used chiefly of the mentum).
- Spatulate**, furnished with a broad racket-shaped expansion
- Spur**, a stout spine (generally at or near the apex of the tibia)
- Sternellum (sternellar)**, the posterior of the two main thoracic sternites
- Sternites**, sclerites composing the sternum or ventral region of the body.
- Stria**, an impressed line
- Striate-punctate** bearing lines of punctures not placed in grooves
- Stridulation**, a shrill noise, produced by friction between two hard surfaces
- Strigose**, finely and irregularly scratched
- Striole**, a term applied to (i) the short striae frequently present on each side of the scutellum, (ii) the recurved stria near the apex of the elytra in the genera *Trechus* and *Tachys*
- Sub-**, in composition, signifies almost, or slightly.
- Submentum**, see *Gula*
- Subocular ridge**, a transverse ridge, with a groove in front of it, beneath the head and behind the eye (*Omophron*)
- Subulate**, terminating in a sharp point like an awl (chiefly used of the last joint of the palpi in the *Bembidiini*).
- Sulcate**, furrowed, or provided with one or more sulci, which are wider and deeper than striae
- Supra-**, in composition, signifies above (e.g., the *supraorbital setæ* on the head, the *supramaxillary plates* in the genus *Siagona*)
- Suture**, the line along which two edges meet (e.g., clypeus and labrum, or the elytra)
- Tegmen, tegmina**, sometimes used of the overhanging margins of the tergites (larvæ).
- Telson**, the supra-anal plate, an appendage of the tenth abdominal tergite, covering the anus (larvæ)
- Tergites**, sclerites composing the *tergum* or dorsal region of the body.
- Tertiary**, see *Primary*
- Testaceous**, a clear brownish yellow, like the paler markings on tortoise-shell
- Tomentose**, clothed with dense soft hairs
- Transverse**, a word used with two significations. (i) wider than long. (ii) in a cross-wise direction

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Subfamily II. HARPALINÆ.

This is by far the largest of the subfamilies into which the CARABIDÆ are divided, it differs from the CARABINÆ, which were dealt with in the first volume of this series, in a very important character, namely, the complete separation of the mesocoxæ and mesepimera, the coxal cavities being entirely closed by the sterna. The classification presents many difficulties, and the scheme adopted here follows in the main that proposed by Ludwig Ganglbauer in his classical work 'Die Käfer von Mitteleuropa,' with such additions as are required by the inclusion of numerous Indian genera. It is impossible to estimate even approximately the number of species of CARABIDÆ inhabiting the Indian region, but it is evident that immense numbers still remain to be discovered, and this point is well illustrated by the fact that, whereas only a few years ago less than a dozen species of *Bembidion* were known from India, more than a hundred are enumerated here.

The volume contains eight groups, namely, the HEXAGONINI and all those (except the BRACHININI) characterized by the presence of a seta in the mandibular scrobe; some further groups might have been included, but there is a convenient break here to separate this volume from the next, which will therefore commence a new section of the subfamily.

Key to the Groups

- | | |
|---|----------------------|
| 1 (64) Venter with six visible segments | |
| 2 (3) Apex of maxilla jointed, or at least functionally mobile, head subpentagonal, with largely developed genæ | Hexagonini, p. 5. |
| 3 (2) Apex of maxilla not jointed or mobile. | |
| 4 (17) Mandibles with at least one seta in the scrobe | |
| 5 (8) Head with a suborbital longitudinal ridge. | |
| 6 (7) Mandibles with several setæ in the scrobe, two supraorbital setæ, the ligula quadrisetose; body flat, pubescent, resembling that seen in the genus <i>Siagona</i> | Cymbionotini, p. 18. |
| 7 (6) Mandibles with a single seta in the scrobe and a single supraorbital seta, the ligula bisetose; body glabrous, tarsi pubescent | Melaniini, p. 26. |

- 8 (5) Head without a suborbital longitudinal ridge, though an oblique temporal ridge or suture is sometimes present
- 9 (10) Prothorax without visible sutures, strongly contracted behind and attached to the hind body by a narrow prolongation of the mesothorax; palpi very long and slender, metacoxæ separated
- 10 (9) Prothorax with its propleura and episterna separated by visible sutures, metacoxæ contiguous
- 11 (12) Head with one or three (sometimes four) supraorbital setæ; body pedunculate, the prothorax connected with the hind body by a mesothoracic prolongation, on which the scutellum is placed (in *Axonya* the prolongation is slight and the scutellum is visible between the elytra)
- 12 (11) Head with two supraorbital setæ, body not pedunculate.
- 13 (14) Ligula 8-setose at apex, head nearly always with very deep frontal furrows curving round behind the eyes, palpi pointed at apex, or, if with a narrow subulate apical joint, the penultimate joint of the maxillary palpi is glabrous
- 14 (15) Ligula bisetose at apex, the frontal furrows not very deep and not curving round behind the eyes
- 15 (16) Apical joint of the palpi very short, subulate, the penultimate joint dilated and pubescent
- 16 (15) Apical joint of the palpi not subulate and of about the same length as the penultimate joint
- 17 (4) Mandibles without seta in the scrobe.
- 18 (19) Apical joint of the maxillary palpi attached eccentrically to the penultimate joint, eyes prominent, neck usually constricted, upper surface more or less punctate and pubescent
- 19 (18) Apical joint of the maxillary palpi attached normally to the penultimate joint
- 20 (21) Mandibles short and thick, emarginate or truncate at apex, clypeus more or less emarginate, often asymmetrically, generally exposing the basal membrane of the labrum.
- 21 (20) Mandibles entire and moderately sharp at apex, basal membrane of the labrum not or rarely exposed

Apotomini, p. 28.

Broscini, p. 32.

Trechini, p. 47.

Bembidini, p. 80.

Pogonini, p. 307.

Panagæni*.

Licinini.

* This volume only goes as far as the POGONINI, but I thought it desirable to give here a classification of the whole subfamily.

- 22 (31) Head with one supraorbital seta on each side.
- 23 (30) Elytra completely covering the abdomen, ♂ profemora without any tubercle beneath
- 24 (27) Outer part of the metacoxæ and first ventral segment not lying in the same plane, ♂ protarsi with four or no dilated joints
- 25 (26) Maxilla hooked and glabrous at apex; antennæ with the two basal joints glabrous Harpalini.
- 26 (25) Maxilla not hooked and with a dense inner fringe of hairs to apex; antennæ with the three basal joints glabrous; mandibles thick and rugose, with rudimentary scrobes, the head deflexed Idiomorphini.
- 27 (24) Outer part of the metacoxæ and first ventral segment lying in the same plane, ♂ protarsi with three dilated joints
- 28 (29) Marginal channel of the elytra normal, shallow or obsolete at apex; form rarely oval Chlaenii.
- 29 (28) Marginal channel of the elytra sulcate at apex, form oval Oedini.
- 30 (33) Elytra truncate at apex, leaving the abdomen partly exposed, ♂ profemora near the base with a tubercle beneath bearing a dense brush of hairs Miscelini *.
- 31 (22) Head with two supraorbital setæ on each side
- 32 (63) Antennæ inserted immediately beneath the preocular ridges
- 33 (42) Elytra completely covering the abdomen
- 34 (35) Body pedunculate, prothorax globose, constricted behind to a narrow stalk, a hind lateral seta present and placed at some distance in front of the hind angles, ♂ protarsi with four dilated joints Disphaericini.
- 35 (34) Body not pedunculate, prothorax not globose, its upper surface quadrate or cordate
- 36 (37) Elytra with stria 8 very deep throughout, close to margin in front, separated from it behind Perigonini.
- 37 (36) Elytra with stria 8 normally impressed and about equally distant from the margin throughout

* This group, though closely related to the Lebiini, is placed here as a matter of convenience. In the two Indian species of *Miscelus*, the only Indian genus in the group, there is only one supraorbital seta on each side, but in the New Guinea species, *M. luctuosus* Putz., and in the Malagasy genus *Antemerina* two setæ are present on each side.

- 38 (39) Penultimate joint of the labial palpi plurisetose on its inner margin Amarini *.

39 (38) Penultimate joint of the labial palpi bisetose on its inner margin

40 (41) Protibiae powerful, dilated at apex, mentum with a bifid tooth, elytra usually with an inner plica visible on each side in a slight emargination near apex

41 (40) Protibiae slender, hardly dilated at apex, mentum nearly always with a simple tooth, inner plica of the elytra wanting or, if present, not visible near apex

42 (33) Elytra more or less truncate behind, leaving the abdomen partly exposed (sometimes rounded in the ORTHOGONINI, but even then with the apical abdominal segment usually visible)

43 (50) Joint 1 of the antennæ scapiform

44 (47) Antennæ slender, joint 1 about as long as the next three taken together

45 (46) Neck about half as wide as the head, prothorax subcylindrical, the border obsolete or, if present, without a sharp edge, tarsal joint 4 bilobed

46 (45) Neck about a third as wide as the head, prothorax normally bordered, with a sharp edge, tarsal joint 4 not bilobed

47 (44) Antennæ fairly stout, joint 1 not longer than the next two taken together

48 (49) Elytra costate, with eight or nine narrow major costæ, and usually with a pair of minor costæ between each two adjoining major ones

49 (48) Elytra normally 9-striate, with moderately convex intervals

50 (43) Joint 1 of the antennæ not scapiform

51 (52) Head narrowed behind to a condyli-form neck, prothorax subcylindrical, with more or less obsolete lateral borders

52 (51) Head not narrowed behind to a condyli-form neck

53 (54) Labrum large, smooth, and semi-circular, practically concealing the mandibles, body hairy, appendages short and stout

54 (53) Labrum normal, more or less quadrate

55 (56) Tibiae serrate, protibiae dilated at apex, prothorax without lateral setæ, tarsi with joint 4 emarginate and often bilobed, claws usually pectinate Platysmatini *

Agonini.

Dryptini.

Zuphlini.

Galeritini.

Physocrotaphlini

Odacanthini.

Helluontini.

Orthogoniini.

* In very rare instances the number of supraorbital setae in these two groups is abnormal.

- 56 (55) Tibiae not serrate; prothorax nearly always with one lateral seta, and generally with two setæ
- 57 (60) Metatibiae furnished with long spurs, sometimes serrulate
- 58 (59) Maxillæ produced above apex into an obtuse ciliate lobe
- 59 (58) Maxillæ ending in a sharp slender hook without any ciliate lobe above it .
- 60 (57) Metatibiae not furnished with long spurs
- 61 (62) Mentum supported at base by a projecting submentum
- 62 (61) Mentum not supported at base by a projecting submentum.
- 63 (32) Antenna inserted far below the pre-ocular ridges, level with the lower margin of the eyes
- 64 (1) Venter with seven or eight visible segments; mandibles with a seta in the scrobe, elytra truncate and with a narrow membranous border at apex.
- Tetragonoderini.
- Masoreini.
- Lebini.
- Pentagonicini.
- Anthiini.
- Brachinini.

Group XI. HEXAGONIINI.

A small tribe containing only three genera, two of which occur in the Indian faunal region, the third being found in Madagascar. The chief distinguishing character, and one which differentiates the group from all other CARABIDÆ, is the presence of a mobile hook at the apex of the inner lobe of the maxillæ, but the joint between the two parts, though sometimes visible, is sometimes functional only. A similar form of maxilla is found in almost all the groups of the CICINDELIDÆ. The head is strongly contracted behind, with a more or less constricted neck, two supraorbital setæ on each side, the mandibles without any seta in the scrobe, the penultimate joint of the labial palpi glabrous, the first three joints of the antennæ glabrous; the prothorax has a groove on each side running parallel with the lateral channel, the elytra are nine-striate and entire at apex, the metacoxæ are contiguous, and the fourth tarsal joint is wide and bilobed.

Key to the Genera.

- 1 (2) Ligula dilated at apex and deeply cleft; prothorax cordate or hexagonal, a lateral sulcus on each side from apex to base, near and running more or less parallel with the marginal channel
- 2 (1) Ligula truncate or slightly emarginate at apex, never deeply cleft; prothorax more or less quadrate, a lateral sulcus on each side from apex to a point about a fourth or fifth from base, where it turns outwards and joins the marginal channel
- HEXAGONIA, p 6.
- DINOPELMA, p 15

Genus HEXAGONIA.

Hexagonia Kirby, Trans Linn Soc xiv, 1825, p 563; Castelnau, Études Ent 1834, p 51, Schmidt-Goebel, Faun. Col. Birmanie 1846, p 49, Schaum, Berl Ent Zeitschr 1863, pp 72 and 433, van de Poll, Notes Leyd Mus xi, 1889, p 247; Dupuis, Gen Ins, Fasc 147, Hexagoniniæ, 1913, p. 2, Andrewes, Trans Ent Soc Lond 1923, p 26

Trigonodactyla Dejean, Spec Gen v, 1831, p 288, Audouin et Brullé, Hist Nat Ins iv, 1834, p 227, G Horn, Trans Amer. Ent Soc. ix, 1881, p 146

TYPE, *Hexagonia terminata* Kirby. (India, Burma, Laos, Java)

Body winged, flat, and glabrous

Head large, flat, more or less pentagonal, with a narrow deeply constricted neck, eyes moderately large and prominent, hardly separated from the buccal fissure, the hind supraorbital seta placed far back at some distance from the eye; genæ very large and conspicuous, often longer than the eye; clypeal suture deep, clypeus bisetose, labrum sexsetose, slightly emarginate in front, frontal sulci only moderately deep, often bounded on each side by an external ridge, which curves inwards behind; mandibles fairly long and stout, the right one slightly toothed, the left one edentate, ligula dilated at apex and so deeply emarginate that the sides project as two horns, each bearing a seta at apex, paraglossæ membranous, free, very narrow, extending well beyond the ligula, mentum rounded at sides, with a fairly deep emargination and an obtuse tooth, a small rounded fovea on each side of base, submentum with a single seta on each side; maxillæ with the outer lobe two-jointed, the inner one provided on its inner side with comparatively few bristles of unequal size, the apex bending sharply inwards in the form of a mobile hook (though a joint is not always apparent), which is setose on its outer side, palpi glabrous, the maxillaries with the last two joints nearly equal, the labials with the apical joint much shorter than the penultimate, antennæ pubescent from and including joint 4, hardly reaching beyond base of prothorax, joint 1 fairly long and stout, joint 2 very short, 2 and 3 with a few setæ at apex

Prothorax hardly larger than head, cordate or hexagonal, the sides being sometimes rounded, sometimes angulate, a lateral sulcus on each side from base to apex, practically parallel with the margin, though widest at middle

Elytra flat, with square shoulders and nearly parallel sides, border rounding the shoulder and generally angulate opposite interval 5, sometimes obsolete opposite interval 3 and with a slight ridge replacing it opposite intervals 1 and 2, an inner phæra present; 9-striate, the striæ more or less punctate, sometimes fairly deep, interval 3 with three pores, 5 with

a single pore. Microsculpture wanting on the head and prothorax, but present on the elytra, the meshes, where visible, isodiametric, much more distinct on the apical than on the basal half, the outline of the meshes so ill-defined that the surface often appears to be minutely punctate.

Sternum: prosternal process unbordered; mesosternum deeply transversely sulcate, its apex subtriangular, notched at extremity; metasternum longitudinally sulcate, the process more or less bordered and fitting into the mesosternal notch, metepisterna long and narrow. *Venter*: segments each with a pair of setæ, apical segment with one seta on each side in the ♂, two (sometimes three) in the ♀. *Legs* rather short: tibiae externally sulcate; tarsal joints short and wide, 1 to 3 diminishing in length, all—but especially 2 and 3—emarginate at apex, 4 deeply bilobed, 1 to 4 fringed with hairs and spongiouse beneath, each part of the claw-joint either smooth and normal, or wide at base, suddenly diminishing midway to less than a half of the width at base, and so leaving a projecting tooth at middle.

The comparative lengths of eye and gena given in the descriptions are those along outer margins, and do not include the angular extension of the former into the fovea behind the eye.

Range South-East Asia, including Formosa and the Malay region, Madagascar, and Africa south of the Equator.

Specimens have been found in various Indian localities between the leaf-sheaths and stem of the plantain (*Musa*), but no biological facts are on record. Another habitat, according to van de Poll, is "the sheaths formed by dead leaves of the sugar-cane."

Key to the Species.

- 1 (12) Elytra not more than two-thirds longer than wide, evidently, if slightly, dilated behind, microsculpture generally forming distinct meshes, at least towards apex
- 2 (5) Elytra ferruginous, with the apical two-fifths black; claws with a projecting tooth at middle.
- 3 (4) The fovea on each side behind the eye connected by a shallow groove with the postorbital pore; prothorax angulate at sides Length 8-9 mm *terminalis*, Kirby, p 8.
- 4 (3) The fovea on each side behind the eye not connected with the postorbital pore; prothorax rounded at sides Length 7 mm [p 10.] *apicalis*, Schm. Goeb.,
- 5 (2) Elytra black
- 6 (8) Prothorax angulate at sides; claws with a projecting tooth at middle.

- 7 (8) Eyes shorter than genæ; vertex impunctate; prothorax punctate only in the basal foves and lateral channels Length 8-10.5 mm [p 10.
longithorax, Wied ,
- 8 (7) Eyes longer than genæ; vertex finely punctate; prothorax finely punctate, except in the middle of disk. Length 7-8 mm.
- 9 (6) Prothorax rounded at sides; claws without a projecting tooth at middle.
- 10 (11) Head and prothorax black, the latter as long as wide, with gently rounded sides, elytral striae moderately impressed and punctate. Length 10.5-12 mm [p 12.
nigra, van de Poll,
- 11 (10) Head and prothorax brown-red, the latter evidently wider than long, with strongly rounded sides, elytral striae and punctures very fine Length 7-9 mm. [p 13.
fleutiauxi, Dupuis,
- 12 (1) Elytra more than twice as long as wide, with parallel sides, microsculpture very slight, hardly forming meshes, claws without projecting tooth. Length about 8 mm
- 13 (14) The groove between eye and post-orbital pore (viewed from above) moderately deep; elytra ferruginous, with a piceous oval spot on apical half, the striae only moderately impressed and finely punctate .. [p 14.
uninotata, sp nov.,
- 14 (13) The groove between eye and post-orbital pore (viewed from above) very deep; elytra ferruginous, with the apical third black, the striae fairly deep and very clearly punctate . . [p 15.
stenodes, sp nov.,

242. *Hexagonia terminata*, Kirby [Plate II, fig 1.]

Hexagonia terminata, Kirby*, Trans Linn. Soc xiv, 1825, p 564; Brullé, in Audouin et Brullé, Hist Nat Ins iv, 1834, p 227; Schmidt-Goebel, Faun Col Birm 1846, p 50; Andrewes, Trans Ent Soc Lond 1919, p 132

Hexagonia Kirby; Schmidt-Goebel*, Faun Col Birm 1846, p 60, t 2, f 2, van de Poll, Notes Leyd Mus xi, 1889, p 250, Bates, Ann Mus Civ Gen xxxii, 1892, p 366, Andrewes, Trans Ent Soc Lond 1923, p 25

Hexagonia andamanensis Pouillaude*, Insecta, iv, 1914, p 165, ff 4 and 5, Andrewes, Ann Mag Nat Hist (9) xiv, 1924, p 501

Colour ferruginous, the underside sometimes piceous, head and prothorax usually piceous or black, joints 4 to 11 of antennæ fuscous, apical two-fifths of elytra black, the black extending a little forward along sides and suture.

Head large, pentagonal, longer than wide; frontal impressions wide and shallow, bounded on each side by a slight

ridge, hardly extending beyond mid-eye level, a few fine punctures within them, genae as long as eyes, curving inwards very sharply to neck; the deep lateral sulcus, which runs on each side between the eye and the front supraorbital, extending back in a straight line to a point a little behind the eye and ending in a fovea, then continuing as a shallow groove to the hind supraorbital pore; antennæ just reaching base of elytron. Prothorax moderately convex, subhexagonal, slightly wider than head and slightly wider than long, base gently arcuate, slightly narrower than apex, widest a little before middle, where the sides are obtusely angulate, front angles rounded, sides practically straight both in front of and behind the angle, sinuate at a sixth from and falling vertically on base, so that the hind angles are right and fairly sharp, a seta at the lateral angle but none visible at the basal angle, median line deep, basal foveæ fairly deep, diverging in front and extending to the front margin on each side as a faint impressed line, lateral channels bounded inwardly by a fairly stout ridge, surface irregularly and finely punctate, nearly smooth on disk, basal area rather more coarsely punctate. Elytra rather flat, a little less than twice as wide as prothorax, nearly two-thirds longer than wide, sides slightly dilated behind, basal border entire, forming a very obtuse angle opposite interval 5, margin faintly sinuate on each side before apex; striae moderately impressed and finely crenulate, a little deeper towards apex, scutellary striole long and rather deep, 1 and 2 arising in an umbilicate pore, intervals rather flat, more convex at sides and near apex, 8 and 9 narrower than the rest, 3 with three pores, the front one not far from base, adjoining stria 3, the second and third on the interval though nearer stria 2 than stria 3, at three-fifths and five-sixths respectively, 5 with a single pore near stria 5 at about three-fourths. Microsculpture visible throughout, but distinct on the apical half only. Sternum: prosternum coarsely and to some extent confluent punctate; metasternum with a few punctures at sides. Legs: claws with a projecting tooth at middle.

Length, 8-9 mm.

Distribution: BOMBAY: North Kanara (*T. R. D. Bell*). UNITED PROVINCES: Haldwani (*H. G. Champion*); Dehra Dun. BENGAL: Munshiganj. BURMA: Tharrawaddy (*G. Q. Corbett* and *H. G. Champion*). ZIGON division (*H. G. Champion*). ANDAMAN ISLANDS. LAOS. JAVA.

Type in the British Museum, that of *kirbyi* in the Prague Museum; that of *andamanensis* in Mr R Oberthur's collection.

Judging by the way in which the specimen was mounted Kirby thought that the type came from the Hardwicke collection, and in that case it was probably found in Kumaon.

Schmidt-Goebel says that the type of *kirbyi* came "perhaps from Darjeeling"

In the Atlas to his 'Genera des Coléoptères' (1854, t 3, f 1) Lacordaire gives a figure alleged to be *Trigonodactyla terminata* Kirby, but in the "Explication des planches" it appears correctly as *T. terminata* Dejean (= *terminalis* Mun Cat), an African species

243. *Hexagonia apicalis*, Schm.-Goeb.

Hexagonia apicalis Schmidt-Goebel*, Faun Col Birn 1846, p 51, Dupuis, Gen Ins, Fasc 147, Hexagoninæ, 1913, t f 11, Andrewes, Trans Ent Soc Lond 1923, p. 26

Rather smaller than *terminata* but coloured in almost exactly the same way. Head with frontal impressions rather shallower, the foveæ behind the eyes much smaller, not connected with the postorbital pores, the antennæ shorter, not reaching beyond the basal fourth of the prothorax. Prothorax rounded at sides, the lateral furrows shallower, the ridges bounding them slighter, the median line wider, more uneven at sides, surface much more closely punctate, especially near the front angles and in the basal foveæ. Elytra flatter, with rather deeper and more evidently punctate striae, the intervals more convex, the pores on 3 and 5 identical, but the hind pore on the left elytron is wanting on interval 3. In the rest of its characters similar to *terminata*

Length, 7 mm

Distribution Cossipore or Darjeeling (J. W. Helfer) Schmidt-Goebel says that the specimen probably came from Darjeeling, but that both it and the example of *kirbyi* (= *terminata*) may have come from Cossipore in the vicinity of Calcutta

Type in the Prague Museum This is the only example seen.

244. *Hexagonia longithorax*, Wied.

Lebia longithorax Wiedemann*, Zool Mag n, 1, 1823, p 58
Hexagonia brunnea Chaudoir*, Bull Mosc 1861, 1, p. 531,
 Schaum, Berl Ent Zeitschr 1863, p 433
Hexagonia longithorax Bates, Ann Mus Civ Gen xxxii, 1892,
 p 366, Andrewes, Trans Ent Soc Lond 1921, p 172

Colour black, shiny; buccal organs and legs darker or lighter ferruginous, antennæ, metasternum, and venter brown or piceous

Head pentagonal, longer than wide, frontal impressions wide and shallow, bounded on each side externally by a slight ridge, reaching mid-eye level, a few fine punctures within them behind; genæ half as long again as eyes, curving backwards less sharply than in *terminata*; the fovea behind the

eye connected, as in that species, with the postorbital pore; antennæ extending a little beyond base of elytra. Prothorax moderately convex, subhexagonal, barely wider than head and only slightly wider than long, widest a little before middle, base truncate, sides obtusely angulate at the widest point, in front of which they curve round to neck, the front angles almost rounded away, straight behind to a sixth from base, thence sinuate and falling vertically on base, the hind angles right and sharp, a seta on each side at the lateral angle, but none visible behind, median line deep, basal foveæ deep, diverging in front, but hardly extending forward beyond middle; lateral channels bounded at least at middle by an inner ridge; surface with some fine cross-striation, basal area and lateral channels behind finely punctate. Elytra rather flat, twice as wide as prothorax, a little over a half longer than wide, slightly dilated behind, basal border entire, forming an obtuse angle opposite stria 4, margin faintly sinuate on each side before apex; striae deep and clearly punctate, at least on basal half, a slight umbilicate pore sometimes visible at the origin of 1 and 2, scutellary striae moderately developed, intervals moderately convex. 7 to 9 narrower than the inner intervals; dorsal pores on 3 and 5 and microsculpture as in *terminata*. Sternum: puncturation of the prosternum and metasternum as in *terminata*. Legs. claws with a projecting tooth.

Length, 8-10.5 mm.

Distribution. UNITED PROVINCES Dehra Dun; Haldwani district, Garhwal (H. G. Champion). BENGAL ASSAM-TIBET frontier. Abor Expedition, Rotung, Upper Rotung, and below Damda (S. W. Kemp). BURMA: Palon and Malewoon (L. Fea).

Type in the Zoological Museum of the University at Copenhagen, that of *brunnea* in Mr. René Oberthür's collection.

The amount of puncturation at the base of the prothorax is variable, and sometimes it is confined to the foveæ. In one of the specimens from Haldwani there are four dorsal pores on interval 3; this appears to be an aberration.

245. *Hexagonia eaurina*, sp. nov.

Very similar in appearance to *longithorax* Wied, coloured in the same way, but slightly smaller. Head of rather different shape; the eyes a little longer than the genæ, which curve round more sharply behind, as in *terminata*, the frontal impressions and vertex finely though not very closely punctate. Prothorax similar in shape, but with only a slight ridge bounding the lateral channels on their inner side, the surface much more closely punctate, with only a small impunctate area on

middle of disk. *Elytra* similar but a little shorter; the striae slightly shallower, especially on apical half, the punctures in them much finer. Microsculpture, puncturation of the sterna, and claws similar.

Length, 7-8 mm

Distribution UNITED PROVINCES. Haldwani division, Kaldbunga (*H G Champion*). LAOS

Type in the British Museum

The Haldwani specimens have a label attached which reads "on or in banana plants," and Mr. Champion informs me that they were found "between leaf-sheaths of *Musa*, mostly where more or less dead or rotten." This is the habitat of a specialized fauna, including flat species of Staphylinidae etc.

246 *Hexagonia nigrita*, van de Poll

Hexagonia nigrita van de Poll, Notes Leyd Mus xi, 1889, p 247; Bates, Ann. Mus Civ Gen xxxii, 1892, p 367, Dupuis, Ann. Soc Ent Belg 1913, p 263, Andrewes, Tijdschr Ent lxxii, 1929, p. 305

Colour black, shiny, palpi ferruginous, tarsi piceous.

Head pentagonal, longer than wide, frontal impressions wide and moderately deep, reaching mid-eye level, genæ longer than eyes, curving very gently backwards and then suddenly contracted to neck, the fovea behind the eye connected with the postorbital pore by a fairly deep furrow, and the two pores sometimes united across the vertex by a vague, irregular, arcuate impression; antennæ extending a little beyond base of elytra, surface impunctate. *Prothorax* convex, cordate, as wide as head and as long as wide, widest at two-fifths from apex, base truncate, front angles rounded away, sides rather gently rounded and sinuate near base, hind angles right and sharp, a seta on each side at the widest point, none at base, median line very deep but not reaching extremities, a slight transverse sulcus bordering the base, basal foveæ deep, close to the angles, arcuate (convex inwards), but hardly reaching middle, lateral channels bounded by a fine inner costa; surface impunctate, but with some vague cross-striation. *Elytra* flat, twice as wide as prothorax, two-thirds longer than wide, slightly dilated behind, basal border angulate opposite interval 5, terminating at stria 3, margin slightly sinuate on each side before apex, striae moderately impressed and clearly punctate on basal half, shallower behind, but deeper again close to apex, 1, 2, and the moderately long scutellary striae united at base, where an umbilicate pore is sometimes visible; intervals slightly convex, dorsal pores on 3 and 5 and microsculpture as in *terminata*. *Sternum*

prosternum punctate, but not at sides, and sometimes impunctate along median line; metasternum slightly punctate at sides. Legs - claws simple, i.e., without any projecting tooth at middle.

Length, 10.5-12 mm

Distribution BURMA: Karen Hills (*L. Fca*) LAOS JAVA.
SUMATRA FORMOSA

Type not traced

247 *Hexagonia fleutiauxi*, Dupuis

Hexagonia fleutiauxi Dupuis*, Ann Soc Ent Belg 1913, p. 325.

Colour black, shiny; palpi ferruginous, joints 1 and 2 of antennæ, head, and prothorax brown-red, underside and tarsi more or less piceous.

Head pentagonal, frontal impressions as in *longithorax*, but a little shallower and extending rather beyond mid-eye level, genæ about as long as eyes, curving sharply back to neck, as in *terminalis*; a fairly deep groove connecting the foveæ behind the eye with the postorbital pore, antennæ barely reaching beyond base of elytra, surface impunctate. Prothorax convex, cordate, barely wider than head, but evidently though slightly wider than long, base truncate at middle, its sides very oblique close to the angles, front angles almost rounded away, sides strongly rounded, sinuate close to the hind angles, which, owing to the obliquity of the sides of base, are very obtuse, a seta on each side at the widest point but none visible behind, median line deep, basal foveæ short but deep, close to the angles, rugose-punctate; surface otherwise smooth. Elytra moderately convex, a little more than a half wider than prothorax, nearly two-thirds longer than wide, very slightly dilated behind, basal border entire, forming a slight angle opposite interval 5, striae fine and finely punctate, the punctures clearly visible in front only, 1, 2, and the scutellary striae arising in an umbilicate pore; intervals nearly flat, 8 and 9 narrower and more convex than the inner intervals, dorsal pores on 3 and 5 as in *terminalis*. Microsculpture of the elytra isodiametric and fairly distinct, even in front. Sterna and claws as in *nigrita*.

Length, 7-9 mm

Distribution BENGAL. Gopaldhara (*H. Stevens*) ASSAM-TIBET frontier Rotung (*S W Kemp*) TONG-KING

Type in the Paris Museum

The material examined is in this case very scanty, and consists of the type, a second example from Tong-king, now in my collection, and the two Indian specimens referred to above. The type is 9 mm long, but my example from Tong-king is only 8 mm long. The Abor specimen is also 8 mm long,

and in this the head, prothorax, and legs are all ferruginous. The Sikkim example is only 7 mm. long, but it is coloured like the type. Both the Indian specimens have more finely striate elytra than those from Tong-king, but the structural characters are otherwise similar, and all are therefore treated as belonging to one rather variable species

Dupuis says that there is a seta present at each hind angle of the prothorax, but there is no sign of one on any of the three specimens now before me.

248 *Hexagonia uninotata*, sp nov. [Plate II, fig. 3.]

Colour pale ferruginous, shiny; joints 1 to 3 of antennæ (rest fuscous), head, and prothorax dark ferruginous or brown, a common, oval, piceous spot on the apical half of the elytra, extending forward to middle and outwards on each side to stria 4 or stria 5

Head pentagonal; frontal impressions as in *longithorax*; genæ hardly longer than eyes, which do not project laterally far beyond them, curving backwards nearly uniformly to neck; a moderately deep groove (viewed from above) on each side between the fovea and the postorbital pore; antennæ just reaching base of elytra. *Prothorax* convex, cordate, as wide as head, slightly wider than long, widest at a fourth from apex, base arcuate, so that its sides are oblique close to the angles, front angles rounded away, sides rounded in front, then nearly straight to a point just before base, where there is a gentle sinuation, the hind angles slightly obtuse, but sharp, and projecting a little laterally, a seta on each side at the widest point, none behind; median line deep, basal foveæ short and not very deep; surface punctate along all the margins, in the foveæ, along the median line, and on each side of disk in front. *Elytra* rather flat, a little more than a half wider than prothorax, more than twice as long as wide, sides nearly parallel, basal border angulate over stria 5, terminating at stria 3, and thence replaced by a slight ridge; striae only moderately impressed, finely punctate, 1, 2, and the short scutellary striole arising in an umbilicate pore behind the basal ridge, intervals slightly convex, 8 and 9 narrower than the rest, dorsal pores as in *terminata*. Microsculpture of the elytra slight, hardly forming meshes, even behind. *Sternum*: prosternum densely punctate, mesosternum, sides of metasternum, and metepisterna moderately punctate. *Legs*: claws normal, without projecting tooth

Length, 7·75–8·25 mm

Distribution UNITED PROVINCES. Dehra Dun (*A. K. Sharma*). BIHAR: Chapra (*Mackenzie*); Pusa (*T. B. Fletcher* and *U. Bahadur*).

Type in my collection.

One of the Dehra Dun examples is labelled "ex *Acacia catechu*," and one of the Pusa examples "on maize stubbles."

249. *Hexagonia stenodes*, sp nov.

Very similar to *unirotata*, and resembling it in coloration, but the prothorax is piceous, the head nearly black, the elytra, instead of the oval spot, having the apical third black, the dark colour running a little forwards along the suture.

Head rather larger in proportion to the prothorax; the lateral sulcus on each side adjoining the eye continuing unbroken and very deep (viewed from above) to the post-orbital pore. *Prothorax* exactly similar in form, but the punctures on the surface are a little larger and more numerous. *Elytra* a little narrower and longer, a third wider than prothorax, two and a third times longer than wide, sides exactly parallel, basal border similar; striæ moderately deep, finely but clearly punctate, the punctures visible to apex, the intervals moderately convex. The remaining characters are all as in *unirotata*.

Length, 8-8.5 mm

Distribution BENGAL: Dacca. ASSAM-TIBET frontier: Abor Expedition, above Panji, 4000 feet (S. W. Kemp).

Type in the British Museum.

The Abor specimen was found under bark.

Genus DINOPELMA.

Dinopelma Bates, Proc Zool. Soc. Lond. 1889, p 385; Andrewes, Ann. Mag. Nat. Hist. (9) xiv, 1924, p 391; id., Journ. F.M.S. Mus. xvi, 1931, p. 437; id., Soc. Ent. Fr., Livre du Centenaire, 1932, p. 253.

Type, *Dinopelma plantigradum* Bates. (Borneo.)

Body winged, glabrous, surface usually shiny.

Head contracted behind to the more or less constricted neck; eyes prominent, adjoining buccal fissure, hind supr-orbital seta distant from eye; clypeus bisetose, labrum transverse, its front margin truncate and sexsetose; mandibles fairly long and stout, the teeth along their inner margin rudimentary; ligula carinate beneath, its apex bisetose, truncate or emarginate, never deeply cleft, paraglossæ narrow, membranous, free, curving slightly inwards, and extending a little in front of ligula; mentum wide, emarginate, lobes rounded, an obtuse tooth in the emargination, with a seta on each side, epilobes present, which sometimes terminate on each side in a slight tooth at the apex of the lobes, sub-mentum with a single seta on each side; maxillæ with an

inner row of bristles, the apex sharp at extremity, jointed; and bent inwards, with a stout brush of hairs on its outer side; palpi glabrous, including the penultimate joint of the labials, last joint slightly shorter than the rest and truncate at apex, antennæ fairly long, pubescent from the basal third of joint 4, joint 1 stouter than the rest, 3 a little shorter than 1, 2 about half as long as 3, 4 to 11 approximately equalling 1

Prothorax more or less quadrate, sometimes with a slight sinuation before the basal angles, lateral margins with or without setæ, a sulcus on each side, running from or near front margin, parallel to and within the lateral border, to a point distant about a fourth or fifth from base, thence turning outwards and joining the border

Elytra with a bordered base, an inner plica (sometimes obsolete), and an emargination on each side near apex, which hardly shows the plica (when present) from above, 9-striate and with a scutellary striole between stria 1 and suture Microsculpture present as a rule on the elytra only, where it is formed by isodiametric meshes

Sternum and *venter*. hind body subpedunculate, the peduncle more or less bordered and with a pair of short longitudinal carinæ beneath, just in front of a concave bordered space between the mesocoxæ, metasternal process bordered; ventral segments bisetose, apical segment bisetose in the ♂, quadrisetose in the ♀. Legs tibiae outwardly sulcate, tarsal joints wide, triangular, and emarginate at apex, clothed beneath with short hairs, joints 1 to 3 decreasing in length, 4 nearly as large as 2 and deeply bilobed, claws smooth

The colour is generally black or piceous in the larger Malay species, but usually with ferruginous markings in the smaller ones, which, differing comparatively little in their structural characters, are distinguishable chiefly by the pattern on the elytra

Range Southern Burma, Siam, Java, Sumatra, Borneo, and the Philippine Is

Key to the Species

1 (2) *Prothorax* slightly, though evidently, wider than long, its hind angles projecting a little laterally, basal foveæ punctate, lateral sulcus bending sharply outwards behind to the margin Length 8 mm

[p 17.
bouchardi, Pilde.,

2 (1) *Prothorax* barely wider than long, its hind angles projecting conspicuously outwards, lateral sulcus not bending sharply outwards behind to the margin, basal foveæ impunctate Length 7 mm

[p 18.
leptaleum, Andr.,

250 *Dinopelma bouchardi*, *Plde*

Hexagonia bouchardi Pouillaude*, Insecta, iv, 1914, p 164, fig. 1-3;
Andrewes, Tijdschr Ent lxxii, 1929, p 305.

Dinopelma bouchardi Andrewes, Ann Mag Nat Hist (10) vii,
1931, p 528, id., Soc Ent Fr. Livre du Centenaire, 1932,
p 261

Colour piceous, shiny; antennæ, venter, sutural interval, and margins of elytra from about stria 6 ferruginous; palpi and an oblong transverse spot near the apex of the elytra, extending on each side to interval 5, pale ferruginous

Head wide, contracting behind to a deep neck constriction, eyes prominent, longer than genæ, which are curved; frontal foveæ deep, curving inwards behind, bounded outwardly on each side by a ridge, antennæ rather slender, extending well beyond base of prothorax. Prothorax convex, quadrate, as wide as head and slightly, though evidently, wider than long, sides of base a little oblique, front angles rounded away, sides bisetose, narrowly bordered, very gently rounded in front and faintly sinuate before the hind angles, which are slightly obtuse, though fairly sharp, and project a little laterally, lateral sulcus well developed, median line deep, hind transverse impression fairly deep, basal foveæ deep, produced a little in front, rugose-punctate, surface generally rather faintly transverse-striate. Elytra convex, subovate, nearly two and a half times as wide as prothorax, a half longer than wide, border forming an obtuse tooth above the shoulder; striae moderately impressed, finely punctate, deeper near apex, intervals slightly convex, 3 with three pores, the first near base adjoining stria 3, the second and third at two-thirds and five-sixths respectively, both on the interval but nearer stria 2 than stria 3, 5 with a single pore at three-fourths, also on the interval, but close to stria 5, surface impunctate. Microsculpture rather faint, on the apical half of the elytra only

Length, 8 mm; width, 3.3 mm

Distribution BURMA: Tenasserim, Tavoy (Doherty). JAVA. SUMATRA

Type in Mr René Oberthür's collection

The description given above applies to typical examples from Java and Sumatra. The species is introduced here because in the British Museum there is a specimen from Tavoy, possibly immature, which agrees structurally with the type-form, though there is no defined apical spot on the elytra, the pale margin merely widening a little at apex

251. *Dinopelma leptaleum*, Andr [Plate II, fig. 9.]

Dinopelma leptaleum Andrewes, Soc Ent. Fr., Livre du Centenaire, 1932, p. 262.

Colour as in *bouchardi*, but with a smaller pale spot at the apex of the elytra

A little smaller and narrower than *bouchardi*, though remarkably like it in general appearance. Head nearly similar, but with rather less prominent eyes. Prothorax evidently narrower, hardly wider than long and slightly narrower than head, the lateral sulcus reaching the margin behind without bending suddenly outwards, the hind angles sharp, right, and projecting further laterally, the basal foveæ with hardly a trace of puncturation. Elytra a little flatter and narrower, the border forming a sharper angle over the shoulder, otherwise the only difference is in the microsculpture, the isodiametric meshes of which are visible throughout.

Length, 7 mm, width, 2.5 mm

Distribution BURMA. Tenasserim, Tavoy. SIAM Renong (all Doherty)

Type in the British Museum.

Of the four specimens examined three are similar, but one of those from Siam, probably immature, is ferruginous throughout, though the elytra are a little paler at margins and apex.

It is quite possible that a third species, *D. lunifer* Andr., at present known only from Perak, may be met with in Southern Burma. It will be readily recognized by its pale ferruginous colour, with a brown crescent on the disk of the elytra.

Group XII CYMBIONOTINI.

This group, known to Chaudoir by the name of COSCIINIDÆ, and to be found in recent catalogues under the name of GRANIGERINI, contains only one genus, *Cymbionotum*. The body is flat, pedunculate, and pubescent, reminiscent of the genus *Siagona*. The head has on each side a suborbital longitudinal ridge and two supraorbital setæ, there are several setæ in the mandibular scrobe, the ligula is quadrisetose at apex, the penultimate joint of the labial palpi is bisetose, and the antennæ are pubescent throughout; the prothorax and elytra are very similar in form to those seen in *Siagona*, the former with two lateral setæ on each side, the latter with the basal border reaching the peduncle. Microsculpture is wanting. The metacoxæ are contiguous, the tarsi pilose on the upper surface, the protarsi ♂ undilated.

As the name *Coscinia* is preoccupied and *Graniger*, as I showed in 1933 (Trans Ent Soc Lond. p 3), belongs to the HARPALINI, I adopted the new name of CYMBIONOTINI for the group.

Genus CYMBIONOTUM.

Coscinia Dejean (not Hübner), Spec. Gen Col. v, 1831, p. 478.
Lacordaire, Gen Col. i, 1854, p. 167; *Chaudoir*, Mon des Siagonides, Bull. Mosc. 1876, i, p. 115; *Bedel*, Catalogue raisonné des Coléoptères du Nord de l'Afrique, 1897, p. 109.
Cymbionotum Baudi, Berl. Ent. Zeitschr. 1884, p. 211, Andrews,
Trans Ent Soc Lond. 1933, p. 3
Graniger Chaudoir (not Motchulsky), Bull. Mosc. 1876, i, p. 118,
Semenov, Rev. Russe d'Ent. in, 1903, p. 169

TYPE, *Siagona schüppeli* Dejean. (Africa.)

Body winged, flat, punctate, and pubescent, as in *Siagona*.

Head large, neck with a fairly deep constriction; eyes small and not very prominent, separated, though not widely, from the buccal fissure; genae inconspicuous; clypeus bisetose, clypeal suture obsolete; labrum emarginate in front, sex-setose, sides bordered by a narrow ridge, frontal sulci obsolete; mandibles short but stout, hooked at apex, each with some slight jagged teeth at middle; ligula somewhat dilated at apex, truncate, quadrisetose, the paraglossæ membranous, narrow, glabrous, curving inwards, and extending well beyond ligula; mentum wide, with strongly rounded sides, the emargination wide and furnished with a bicuspid tooth, epilobes well developed, maxillæ with the outer lobe two-jointed, the inner one hooked at apex, the inner margin furnished with numerous bristles; palpi short, sparsely setulose, maxillaries with the apical joint twice as long as the penultimate, tapering at apex, labials with the last joint subtruncate at apex; antennæ pubescent, more densely towards apex, about half as long as the body, submoniliform, joint 1 longer and stouter than the rest, 2 very short, sub-globular.

Prothorax cordate, rather vaguely constricted close to base, the sides with a very narrow border, a long seta on each side close to the apex and another on the hind angle, the surface punctate

Elytra rather flat, the base truncate, produced in front to form a peduncle, as in *Siagona*, the shoulders square, the sides nearly parallel, the border rounding the shoulder and reaching the peduncle, a slight sinuation sometimes present on each side before apex, inner plica very slight; striæ variable, but when present lightly impressed, a few long setæ projecting from the marginal pores, surface punctate, without any

distinct dorsal pores Microsculpture wanting, though some isodiametric meshes can sometimes be seen on the neck

Sternum prosternum punctate, with a deep median sulcus, a transverse sulcus just before base, metasternum punctate at sides, nearly smooth at middle, metepisterna long and narrow. *Venter* more finely punctulate than the sterna. Legs more or less pilose; femora dilated, mesotibiae with a slight emargination on the outer side near apex, and above it a slight projection, bearing a bunch of bristles, directed backwards; joints 1 to 4 of tarsi very short, decreasing gradually in length from 1 to 4, 5 as long as the first four taken together, the claws long and smooth

Range Southern Asia, excluding the Malay Archipelago, Persia, Transcaspia, and Africa

Nothing is known of the life-history of these insects

With the slender material available, adequate only in the case of *helferi*, it has not been possible to ascertain the relationship existing between the clypeal tubercle and the sex of the insect, though in other genera a horn or tubercle on the head (e. g., *Carterus*) or on the mandible (e.g., *Sagona* and *Oxylobus*) is a ♂ character. In *helferi* the ♂ has a well-developed tubercle, and one more or less developed is present on all the numerous specimens examined, but in the case of the other species further material is required, no less than three of those enumerated below being represented each by a single example

Key to the Species

- 1 (6) Antennæ with joints 5 to 10 twice as long as wide Large species of at least 5 25 mm in length
- 2 (5) Antennæ with joint 2 globular, median line of the prothorax very fine, body flat, pubescence short and inconspicuous Length not exceeding 6 mm
- 3 (4) Elytra finely but very distinctly punctate; colour of upper surface uniformly piceous Length 6 mm
- 4 (3) Elytra very finely and rather indistinctly punctate, colour of upper surface ferruginous or dark red, the elytra with a black crescent at apex Length 5 25 mm
- 5 (2) Antennæ with joint 2 pyriform, median line of the prothorax fairly deep, body moderately convex, pubescence fairly long and conspicuous, elytra red, with the apical half black Length 7 mm.
- 6 (1) Antennæ with joints 5 to 10 ovoid, not more than a half longer than wide Small species, not exceeding 4 25 mm in length

[p. 21
semelederi, Chaud.,

[p. 22
luniferum, sp. nov.,

minax, sp. nov., p. 22.

- 7 (10) Upper surface ferruginous, the elytra sometimes with a vagus cloud on disk.
 8 (9) Upper surface dark ferruginous, the elytra sometimes clouded on disk; eyes moderately prominent, elytra barely four-fifths longer than wide, the inner striae distinctly though lightly impressed
 9 (8) Upper surface pale ferruginous, eyes rather flat, elytra narrow, very nearly twice as long as wide, the inner striae indicated but not impressed
 10 (7) Upper surface ferruginous, with a dark pattern on the elytra
 11 (12) Elytra with a deep black band across middle, stria 1 only distinctly impressed
 12 (11) Elytra with the apical half black, but with a pale triangular spot on each close to apex, the five inner striae lightly impressed
- [p. 24.
helpsi, Chaud., p 23
candidum, sp nov..
- [p. 25.
fascinervum, Chaud.,
[p. 25.
flutiale sp nov..

252 *Cymbionotum semelederi*, Chaud.

Coccinella semelederi Chaudoir *, Bull. Mosc. 1861, 1, p 6; id., Mon. p 124; Marseul, Abeille, 1867, p xxxii, Fairmaire, Ann. Soc. Ent. Fr. 1868, p 472; Semenov, Hor. Soc. Ent. Ross. xxv 1891, p 288; Bedel, Cat rais Col N. Afr. 1897, p 109

Cymbionotum collare Baudi *, Berl. Ent. Zeitschr. 1864, p 213.

Colour piceous, palpi and tarsi ferruginous

Head wide, moderately punctate, a little less closely on vertex, clypeus with a rounded boss on the middle of the front margin, joint 2 of antennæ globular, 3 to 6 pyriform, narrow at base and dilated at apex, 7 to 10 similar but less dilated at apex, fully twice as long as wide Prothorax punctate like the head, evidently though slightly wider than head, barely wider than long, apex a half wider than base, sides nearly parallel in front, thence strongly contracted to the apparent base, in front of which the hind angles project on each side as a minute rectangular tooth, median line extremely fine, the other impressions obsolete Elytra a little more finely punctate than the head and prothorax, a fifth wider than prothorax, four-fifths longer than wide; striae punctate, the four inner ones visible though hardly impressed, except near apex, intervals flat, with a row of punctures down the middle of each, the puncturation at sides quite irregular, the punctures of the same size as those in the striae

Length, 6 mm

Distribution BALUCHISTAN. AFGHANISTAN. SOUTH-WEST ASIA NORTH AFRICA

Type in Mr. René Oberthur's collection

Though no specimens have been met with yet within the Indian frontier it is quite possible that the species extends its habitat as far as Sind.

253. *Cymbionotum luniferum*, sp nov

Colour ferruginous, head and prothorax dark red, elytra with a black crescent on the apical half, antennæ and femora piceous. In effect the elytra have the apical half black, with a ferruginous extension down the middle, reaching stria 5 on each side at base, gradually narrowing behind, and terminating at a fifth from apex

Head large and wide, rather coarsely but not very closely punctate; clypeus with a slight tubercle at the middle of front margin; joint 2 of antennæ globular, 3 to 4 pyriform, narrow at base and dilated at apex, 4 a little shorter than 3 and 5, 5 to 8 twice as long as wide, 11 equal to 10 and both shorter than 1. *Prothorax* punctate like the head but a little less closely, barely wider than head but a fifth wider than long, apex two-thirds wider than base, sides nearly parallel in front but contracting sharply behind to the apparent base, just in front of which the hind angles project on each side as a sharp, distinct, rectangular tooth; median line fine, not reaching extremities, the other impressions obsolete. *Elytra* much more finely punctate than the head and prothorax, only a little wider than prothorax, four-fifths longer than wide, striae finely and indistinctly punctate, the four inner ones only being clearly traceable and stria 1 no deeper at apex, intervals flat, with a widely spaced row of punctures, hardly larger than those in the striae, down the middle of each, the punctuation at sides more irregular

Length, 5.25 mm

Distribution PUNJAB · Lyallpur (*T. B. Fletcher*)

Type in the British Museum

The type is labelled "India" (Nevinson collection), and as it bears no tubercle on the clypeus it is presumably a ♀.

254. *Cymbionotum minax*, sp nov [Plate III, fig 2.]

Colour black, very slightly more than the front half of the elytra red, the palpi ferruginous. Body with unusually long pubescence

Head wide, rather closely and coarsely punctate, hardly less closely on the vertex; clypeus without any boss or tubercle, antennæ submoniliform, joint 1 not more than twice as long as wide, equal to 11 in length, 2 to 10 more or less pyriform, narrow at base and dilated at apex, two rather shorter and

3 rather longer than the rest, which are twice as long as wide. *Prothorax* moderately convex, closely punctate, the punctures a little finer than those on the head, evidently though slightly wider than head, and a little wider than long, apex less than a half wider than base, sides gently rounded in front, but from about middle contracting rather sharply to the apparent base, in front of which the hind angles project on each side as a small rectangular tooth; median line fairly deep, crenulate, not reaching extremities, the other impressions obsolete. *Elytra* moderately convex, rather more finely punctate than the prothorax, a fifth wider than prothorax, slightly more than three-fourths longer than wide; the inner striae indicated rather than impressed, the punctures in them slightly larger than those running down the middle of each interval, so that there are about sixteen rows of punctures, fairly regular on the disk but more irregular near the sides.

Length, 7 mm.

Distribution NORTH INDIA (?) (*Capt. Boys*).

Type in the Hope Department of the Oxford University Museum

The specimen is unique, and the only label it bears is "Capt. Boys," but as he is not known to have collected anywhere but in North India it may be assumed that it was found in that region.

C semirubricrus Reitter from Mt Lebanon seems nearly related, but is smaller and only the apical third of the elytra is black; it is only moderately punctate, and the elytra are almost twice as long as wide.

255. *Cymbionotum helleri*, Chaud [Plate III, fig. 1]

Coscinia helleri Chaudour *, Bull Musc 1850, 1, p 441; id., Mon. p 122, Bates, Ann Mus Civ Gen. xxxii, 1892, p 286

Colour rather dark ferruginous, the head, prothorax, and antennæ generally darker than the rest of the body and sometimes brown, a vague brown spot sometimes visible on the disk of each elytron

Head moderately and not very closely punctate; clypeus with a tubercle at the middle of the front margin; antennæ moniliform, joint 2 a little shorter and 3 a little longer than 4 to 10, which are ovoid and not much longer than wide. *Prothorax* punctate like the head, slightly wider than head and slightly wider than long, apex a half wider than base, sides with border vaguely crenulate, almost parallel at first and sharply contracted to the apparent base, before which there is a gentle sinuation, the hind angles standing out on each side before the apparent base as a sharp projecting tooth; median line deep, but not reaching extremities, the

other normal impressions obsolete. *Elytra* more finely punctate than the head and prothorax, about a fourth wider than prothorax, nearly four-fifths longer than wide, striae rather finely and indistinctly punctate, 1 fairly deep on the apical half only, 2 to 4 or 5 generally visible, the outer striae wanting, intervals nearly flat, a row of punctures down the middle of each, the puncturation generally a little irregular, especially at sides.

Length, 3-4 mm

Distribution BURMA. Bhamo and Mandalay (*L. Fea*), Prome and Toungoo (*G. Q. Corbett*), Tharrawaddy (*G. Q. Corbett* and *H. G. Champion*), Pegu, Insein (*H. G. Champion*), Rangoon (*L. Fea* and *E. A. D'Abreu*), Martaban (*J. W. Helfer*), Tenasserim (*J. W. Helfer* and *E. T. Atkinson*), Victoria Point (*E. T. Atkinson*) SIAM LAOS COCHIN-CHINA.
CAMBODIA

Type in Mr Rene Oberthur's collection.

256 *Cymbionotum candidum*, sp. nov

Colour pale ferruginous, head reddish-brown, antennæ piceous

Head moderately punctate, a little less closely on vertex; clypeus with a conspicuous tubercle at middle of front margin, eyes rather flat, antennæ moniliform, joint 1 hardly longer than 11, 2 a little shorter and 3 a little longer than the other intermediate joints, 4 pyriform, 5 to 11 more or less ovoid. *Prothorax* with the punctures a little finer and less closely placed than those on the head, slightly wider than head but hardly appreciably wider than long, apex about a half wider than base, sides rather sharply rounded close to the front angles, almost angulate at the widest point, contracted behind a little more gradually than in the other species, the hind angles projecting on each side as a minute tooth; median line fairly deep but not reaching extremities, transverse basal sulcus moderately impressed at middle. *Elytra* a little more finely punctate than the prothorax, a sixth wider than prothorax, very nearly twice as long as wide, stria 1 impressed near apex only, otherwise the four or five inner striae are merely indicated by the rows of punctures, intervals flat, with a row of punctures down the middle of each, the puncturation very clear, but somewhat irregular both in the striae and on the intervals, quite irregular at sides

Length, 3 6 mm

Distribution PUNJAB Chichawatni Plantation (*R. N. Mathur*).

Type in the British Museum. The type is at present unique.

257. *Cymbionotum fascigerum*, Chaud

Coccinie fasciger Chaudoir *, Bull. Musc. 1852, i, p. 92, id., Mon. p. 121; Bates, Ann. Soc. Ent. Fr. 1889, p. 264

Very similar to *helferi* and about the same size, though slightly narrower. The colour is the same also, but here there is a deep black band across the elytra occupying from a third to a half of the surface. The head and prothorax are similar, but the proportions are slightly different, the prothorax being barely wider than head or wider than long, and the puncturation of the surface is a little finer. The elytra are only a fifth wider than prothorax and twice as long as wide, the striation as in *helferi* but the punctures throughout are larger and more distinct, so that the inner striae, though not more impressed, are more clearly visible.

Length, 3 25-4 25 mm

Distribution UNITED PROVINCES: Fyzabad (R. W. G. Hingston), Kheri Forest division (H. G. Champion) BENGAL: Calcutta (J. W. Helfer) MADRAS: Barkuda Island in Lake Chilka (N. Annandale); Madras (F. H. Gravely) CEYLON: Hambegamuwa and Horawupotana (G. M. Henry) COCHIN-CHINA ANNAM

Type in Mr. René Oberthür's collection

The indications of length given above, both for this species and for *helferi*, include those of the author, but among the numerous specimens examined no example of *fascigerum* has exceeded 4 mm in length and none of *helferi* has been less than 3 25 mm

258 *Cymbionotum fluviale*, sp. nov

Colour ferruginous, antennæ, head, and prothorax reddish brown, elytra with the apical half black, but with a pale triangular spot on each close to apex, not quite reaching either margin or suture

Head moderately punctate, with a small smooth area on vertex; clypeus with a very slight tubercle, antennæ moniliform, joints 1 and 11 of equal length, 2 to 7 short and more or less pyriform, 8 to 10 ovoid. Prothorax a little more coarsely punctate than the head, slightly wider than head and equally slightly wider than long, apex nearly a half wider than base, sides gently rounded in front and then strongly contracted to the apparent base, in front of which the hind angles project on each side as a minute rectangular tooth; median line fairly deep but not reaching extremities, slight basal foveæ visible near the angles. Elytra much more finely punctate than the prothorax, a fourth wider than prothorax, three-fourths longer than wide, striae finely punctate, the five inner

ones lightly impressed, 1 moderately impressed on disk and fairly deep near apex, intervals nearly flat, a row of fine punctures down the middle of each, the puncturation irregular at sides and somewhat irregular on disk both in the striae and on the intervals

Length, 4 mm

Distribution BENGAL Sandarbans, Narkeldanga

Type in the British Museum The type is at present unique, and is labelled "ex *Sonneratia apetala*"

Group XIII MELÆNINI

There is only one genus, *Melænus*, which has hitherto been associated with *Cymbionotum*, but, although it is similar in many of its characters, it is so widely different in others that it has seemed best to form a separate group for it. The body is glabrous, the head not contracted behind, with a longitudinal suborbital ridge and a single supraorbital seta on each side, the mandibles with a seta in the scrobe, the ligula narrow and bisetose at apex, the penultimate joint of the labial palpi bisetose on the inner margin, but with a few small setæ near base, the first four joints of the antennæ glabrous; the hind lateral seta in the prothorax is wanting and the elytral border only extends inwards to a point opposite stria 5. The metacoxæ are barely separated by the sharp point of the metasternum, the tarsal joints are pilose on the upper surface, the protarsi ♂ undilated.

Genus MELÆNUS.

Melænus Dejean, Spec Gen Col v, 1831, p. 481, Brullé, in Audouin et Brullé, Hist Nat Ins v, 1835, p 85, Lacordaire, Gen Col 1, 1854, p 166, Andrewes, Trans Ent Soc Lond 1921, p 184, Péringuery, Ann S Afr Mus xxiii, 1926, p 607

TYPE, Melænus elegans Dejean (Africa)

Body winged, glabrous

Head rather small, convex, neck unconstricted; eyes small and not very prominent, distant from buccal fissure, clypeus bisetose, clypeal suture just visible as a very fine line, labrum narrow, the front angles rounded, slightly emarginate in front and sexsetose, no frontal sulci, mandibles short, slightly hooked at apex, right one with two teeth near middle, left one with one tooth near base, upper surface longitudinally strigose, ligula narrow, corneous, bisetose, widened and hollowed out at apex, with a sharp longitudinal ridge beneath, paraglossæ whitish, filamentous, free, rather longer than ligula, mentum short, moderately emarginate, with an

emarginate median tooth, shorter than lobes, which are rounded at sides and apex, the epilobes very wide, extending far in front of the lobes, gula with a seta on each side, maxillæ with the outer lobe two-jointed, inner lobe setulose along inner margin and furnished also with a row of bristles, apex bare, sharp, and strongly hooked, maxillary palpi with the antepenultimate rather longer than the apical joint, glabrous (except at apex), penultimate rather shorter than the apical joint, dilated towards apex and setose, apical joint setose, a little inflated, truncate at apex, labial palpi with the last two joints about equal in length, the apical joint cylindrical, setose, contracted at base, subtruncate at apex, antennæ reaching middle of elytra, joints 1 to 4 glabrous, 5 to 11 densely setose, 1 short, cylindrical, with a single seta on the upper surface near apex, 2 very short, 3 and 4 with a few setæ at apex, 3 equal to and 4 a little shorter than 1, 5 to 11 distinctly longer than 1. flattened, with a longitudinal ridge down the centre of each

Prothorax cordate, a single seta on each side at a fourth from apex, none at basal angle, base with a fringe of very fine yellowish hairs, its sides oblique close to the hind angles

Elytra with the base pedunculate, the border rounding the shoulder and extending inwards to a point opposite the middle of interval 5, a slight sinuation on each side near apex, and an inner plica visible in the sinuation, fully striate, the striæ deep and punctate, 1 to 4 not reaching base and each with a deep puncture in front of it on the peduncle, 8 only reaching apex, 8 and 9 joining before reaching base, 9 ending behind at the sinuation, scutellary striole wanting, intervals convex, almost costate at sides, 1 to 8 terminating in a ridge behind, which runs parallel with the apical border, a few long setæ, chiefly near base and apex, arising from the marginal pores Microsculpture formed by extremely fine transverse lines, which are very vague on the head and prothorax *Sterna* punctate, prosternal process depressed but hardly bordered, metasternal process finely bordered, metepisterna long and narrow *Venter* punctate, glabrous, the last three segments transversely sulcate, apical segment ♀ with a pair of very small setæ, placed close together, ♂ without setæ *Legs* femora much dilated, tibiae slender, the protibiae not dilated at apex, mesotibiae with a slight projection on outer side near apex, bearing a bunch of bristles, tarsi with the joints decreasing in length from 1 to 4, 5 with setæ beneath, claws smooth

Range India and Ceylon

I found *M. piger* commonly in the refuse bordering the rice-fields at Belgaum, and it has been taken flying to light in the evening Nothing is known of the life-history

259. *Melænus piger*, Fabr [Plate II, fig. 2.]

Brachinus piger Fabricius *, Syst Eleuth 1, 1801, p 219; Schaum, Stett Ent Zeit 1847, p 49, Erichson, Stett Ent Zeit 1847, p 142

Melænus piger Motchulsky, Études Ent iv, 1855, p 42, Andrewes, Trans Ent Soc Lond 1921, pp 164 and 185

Colour dull black, sometimes with a faint purplish lustre, tarsi, labrum, palpi, and joints 5 to 11 of the antennæ brown, the last-named with a dense, short, yellowish pubescence

Head convex, punctate, a little less closely on disk, clypeus smooth, the sides forming a ridge on each side in front of the eye Prothorax convex, a half wider than head and a fourth wider than long, base evidently narrower than apex, oblique close to the angles, sides narrowly bordered, well rounded, front angles a little obtuse and rounded, hind angles forming on each side a small rectangular tooth, median line fairly deep, not reaching extremities, basal foveæ slight but visible, surface rather coarsely but not very closely punctate Elytra moderately convex, a fifth wider than prothorax, about four-fifths longer than wide, hardly perceptibly widened behind, punctate-striate, the striæ moderately deep on disk, much deeper at sides, the intervals becoming gradually narrower and more convex from 5 outwards, so that 9 is hardly more than a fourth as wide as the inner intervals

Length, 8–10 mm, width, 2 5–3 mm

Distribution INDIA. common throughout the southern half of the peninsula CEYLON Horawupotana (G M Henry)

Type in the Copenhagen University Zoological Museum

Only two other species of this genus are known, both from Africa, and one of those, *M. elongatus* Chaud, from Kordofan, described in 1843, has received no further notice The other one, *M. elegans* Dej, is a well-known African insect It is almost an exact counterpart of the Indian species, but may nevertheless be readily distinguished from it by the presence of a small tubercle on each side of the prothorax just in front of the hind angles

Group XIV APOTOMINI

Another group containing a single genus, the species of which are small and in their general form recall those of the genus *Dyschirius*, but in *Apotomus* the body is more or less pubescent and the colour is different, being black, brown, or reddish, without any metallic lustre The chief characters distinguishing the genus are the extremely long and slender palpi and the complete absence of visible sutures on the prothorax The head has only one supraorbital seta on each

side, there is a seta in the mandibular scrobe, the penultimate joint of the labial palpi is pilose, and the antennæ have the two basal joints only glabrous; the metacoxæ are separated from each other, the meso- and metatibiæ are obliquely hollowed out externally at apex, the ♂ protarsi undilated

Genus APOTOMUS.

Apotomus Illiger, Mag Ins vi, 1807, p 348, Dejean, Spec Gen Col i, 1825, p 449; Lacordaire, Gen Col i, 1854, p 172, Reitter, Synopsis (European species), Wien Ent Zeit. 1892, p 137; Duppis, Gen Ins, Fasc 117, Apotominae, 1911, p 1; Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p. 15

TYPE, *Scarites rufus* Rossi. (Mediterranean basin)

Body winged, pubescent.

Head small, eyes rather large, only moderately prominent, narrowly separated from the buccal fissure, genæ obsolete; labrum slightly emarginate in front, sexsetose, clypeal suture slight but visible, frontal sulci shallow; mandibles short but stout, hooked at apex, ligula narrow, rounded at apex and 4-setose, paraglossæ adnate, extending a little beyond the ligula; mentum deeply emarginate, without tooth, submentum with a seta on each side, maxillæ with the outer lobe two-jointed, the inner one furnished with numerous bristles along the inner margin, hooked at apex, maxillary palpi very long and slender, as long as the head, setulose, the last joint slightly shorter than the penultimate, contracted at apex, labial palpi even more slender than the maxillaries and only a third as long, setulose, apical joint pointed at its extremity, a little shorter than the penultimate; antennæ filiform, pubescent from and including joint 3, joint 1 dilated, about as long as 3, 2 about two-thirds of 3, the other joints equal, but the apical joint is a little longer and pointed at extremity

Prothorax subglobose, strongly contracted behind and attached to the hind body by a peduncular extension of the mesothorax, base short, narrow, parallel-sided, embracing the peduncle, sides unbordered, a single seta at the widest point, all the different parts (pronotum, prosternum, propleura, episterna, and epimera) closely united, without any sign of suture.

Elytra moderately convex, oblong, with nearly parallel sides, slightly sinuate before apex, no basal border, 9-striate, the striæ punctate, no scutellar striole, marginal channel with fine punctures, from which here and there issue long setæ Microsculpture formed by microscopic punctures or aciculations, but some isodiametric meshes are visible on the head.

Sterna more or less punctate; metepisterna much longer than wide. Venter rather closely and finely punctate. Legs: profemora moderately dilated; tibiae without marginal bristles, the two hind pairs obliquely emarginate at apex on the outer side, tarsal joints long and slender, ♂ protarsi without dilated joints, claws smooth.

Range. Southern Europe, Africa, Madagascar, Southern Asia including the Malay Archipelago, and Australia.

Nothing is known of the life-history. In Southern Europe these insects are said to be found in little colonies under stones, and in India they frequently fly to light in the evening.

Key to the Species

- 1 (2) Body clothed with a short grey tomentum, colour black or brown, the punctures of the elytral striae obsolete close to base and apex [p. 30.]
- 2 (1) Body clothed with a dense erect pubescence, colour dark ferruginous, the punctures of the elytral striae clearly visible both near base and apex *hirsutulus*, Bates, p. 31.

260. *Apotomus atripennis*, Motsch.

Apotomus atripennis Motschulsky *, Etudes Ent. vii, 1858, p. 99
Andrewes, Trans Ent Soc Lond 1928, p. 15.

Apotomus fuscus Motschulsky *, Etudes Ent vii, 1858, p. 2
Bates, Ann Soc Ent Fr. 1889, p. 264, Dupuis, Ann. Soc. Ent. Belg. 1911, p. 36, Andrewes, Trans Ent Soc Lond. 192

p. 15.
Apotomus xanthotelus Bates *, Ent. Month Mag xi, 1874, p. 95
id., Ann Mus Civ Gen. xxvi, 1889, p. 100, id., Ann Mus Civ. Gen. xxxi, 1892, p. 286, Bouchard, Ann. Soc. Ent. Fr. 1903, p. 170, Dupuis, Gen. Ins., Fasc. 117, Apotomus, 1911, p. 11.

Apotomus eumbaranue Heller (not Dupuis) *, Deutsche. Ent. Zeitschr. 1916, p. 275, Andrewes, Ann. Mag. Nat. Hist. (9) xvii, 1926, p. 254

Colour black or brown; palpi, joints 1 and 2 of the antennæ, and legs ferruginous; joints 3 to 7 of the antennæ brown or black, the four apical joints yellowish white.

Body covered with an extremely short pale grey tomentum, frequently abraded, without the stiff erect pubescence generally seen in the other species of the genus surface microscopically rugose-punctate.

Head with a slight impression on each side at the extremities of the clypeal suture; eyes large but not very prominent; antennæ quite reaching basal third of elytra. Prothorax not quite a half wider than head, a sixth wider than long, the sides contracting much more behind than in front, so that the apex is a half wider than the base, median line

lightly impressed but quite distinct, surface smooth, the area between the constriction and the base coarsely punctate. *Elytra* a half wider than prothorax, two-thirds longer than wide, a little depressed at middle just behind base, shoulders conspicuous, base sloping forward to the peduncle, lateral border not extending beyond shoulder, though the border of the epipleuron reaches the peduncle, sides with a slight sinuation before apex, striae moderately deep and conspicuously punctate, but much shallower near apex and disappearing on the basal declivity, though the inner striae sometimes reach the peduncle; intervals a little convex on disk, 1 somewhat raised, 4 a little wider than the others close to base.

Sterna rather coarsely punctate except the sides of the prosternum and the disk of the metasternum on each side of the median sulcus. *Venter* very finely rugose-punctate.

Length, 3-3.25 mm

Distribution BOMBAY: Bandra (*Jayakar*); Belgaum, Parle (*H. E. Andreces*). MADRAS CEYLON: Colombo (*J. Nieiner*). CENTRAL PROVINCES: Nagpur (*E. A. D'Abreu*). UNITED PROVINCES: Haldwani (*H. G. Champion*). BENGAL: Calcutta (*F. H. Gravely*), Namsoo (*H. Stevens*). BIHAR: Pusa. SIKKIM: Rangit Valley, and Gielle Khola in the Tista Valley (*H. Stevens*). EASTERN DUARS (*H. Stevens*). BURMA: Bhamo and Rangoon (*L. Fea*); Tharrawaddy and Toungoo (*G. Q. Corbett*), Pegu; Tenasserim (*J. W. Helfer*). MALAY STATES. SIAM. INDO-CHINA. JAVA. SUMATRA. CELEBES. NEW GUINEA.

Type and type of *fuscus* both in the Moscow University Zoological Museum; that of *xanthotelus* in Mr. René Oberthür's collection, that of *sumbawanus* in the Dresden Museum.

Bates's "var. *pallidior*" (Ann. Mus Civ. Gen. xxxii, 1892, p 286) refers only to pale and probably immature specimens

281 *Apotomus hirsutulus*, Bates (Plate III, fig. 3.)

Apotomus hirsutulus Bates *, Ann. Mus Civ. Gen. xxxii, 1892, p 287, Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p. 15.

Colour rather dark ferruginous, joints I and 2 of the antennæ, palpi, and legs a little paler, joints 8 to 11 of the antennæ yellowish white

Body covered with dense erect pubescence, the microscopic puncturation of the surface very indistinct

Very similar in form to *atripennis*, but the prothorax is a little less constricted behind and the basal area is rather more coarsely punctate. In the elytra the sides of the base run forward less obliquely to the peduncle, so that the shoulders

are squarer, the striae are a little deeper, and the punctures quite evident both on the basal declivity and near apex

Length, 3 25–3 75 mm

Distribution BOMBAY Belgaum, Tudia (*H. E. Andrewes*), Kanara (*T. R. D. Bell*) MADRAS Rambha and Barkuda Island in Lake Chilka (*N. Annandale*) ; Madura (*R. B. Wright*) CENTRAL PROVINCES Nagpur and Balaghat (*E. A. D'Abreu*), Raipur, Birguri (*N. C. Chatterjee*), Hoshangabad (*T. B. Fletcher*), Lampta (*G. Babault*) UNITED PROVINCES Haldwani and Kheri (*H. G. Champion*) BENGAL Calcutta (*N. Annandale, F. H. Gravely, E. T. Atkinson, and H. S. Pruthi*), Sardah and Sandarbans (*F. W. Champion*), Diamond Harbour (*T. D. A. Cockerell*), Khargpur (*R. Hodgart*) BIHAR Pusa (*H. M. Lefroy*), Ranchi (*W. H. Irvine and W. B. R. Laird*), Madhupur (*C. Parva*), Singbhumi (*F. H. Gravely*) BURMA Rangoon and Pegu, Palon (*L. Fea*), Tharrawaddy and Toungoo (*G. Q. Corbett*), Tenasserim (*J. W. Helfer*)

Type in the Genoa Civic Museum

Group XV BROSCINI

A moderately large group, with nearly thirty genera, spread throughout the world, but attaining its maximum development in Australia and New Zealand, and represented in India by five genera, all found in the Himalayas. The body is pedunculate, the contracted and generally sub-cylindrical base of prothorax connected with the hind body by a stalk-like prolongation of the mesothorax the scutellum usually placed on the peduncle above the elytra. On the head the number of supraorbital setæ is variable, the mandibles have a seta in the scrope, and the penultimate joint of the labial palpi is bisetose, the prothorax has a variable number of lateral setæ, the hind one, when present, placed at some distance in front of the hind angle. The metacoxæ, at least in the Indian species, are contiguous or only very narrowly separated.

Key to the Genera

- 1 (8) Neck not or only lightly constricted, prothorax bordered at sides, apical ventral segment ♀ with two marginal setæ on each side
- 2 (7) Head with a single supraorbital seta on each side, prothorax with not more than 3 marginal setæ on each side, apical ventral segment ♂ with a single seta on each side, tarsal joints glabrous above.

3 (6) Temporal ridges well developed; prothorax with more than one marginal seta on each side; prosternal process sulcate. Large species of at least 14 mm in length; colour black, bronze, or reddish.

4 (5) Submentum with two or three setae on each side, prothorax with the lateral border regularly rounded, entire or only faintly crenulate, elytra regularly striate

5 (4) Submentum with a single seta on each side, prothorax with the lateral borders evidently crenulate and more or less incised opposite the front lateral pair, elytra conspicuously punctate below at the shoulders

6 (3) Temporal ridges obsolete, prothorax with a single marginal seta on the front half; prosternal process not sulcate. A single species not exceeding 11 mm. in length, colour green

7 (2) Head with 3 (sometimes 4) supraorbital setae on each side, prothorax with 4 to 7 marginal setae on each side, apical ventral segment ♂ with two setae on each side, tarsal joints with the upper surface sparingly clothed with long setae

8 (1) Neck deeply constricted, prothorax unbordered at sides, apical ventral segment ♀ with a single marginal seta on each side

Brosius, p. 33

CRAEPPHOROTUS, p. 39

Axonyx, p. 40

CHITONOSCELES, p. 42

BROSCOSOMA, p. 44.

Genus BROSCUS

Braucus Panzer, Index Ent. 1813, p. 62; Lecointe, Gen. Col. 1, 1854, p. 239, Putzeys, Les Braucides, Stett. Int. Zeit. 1863, p. 307, Ganglbauer, Käf. Mitteil. 1, 1892, p. 143, Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p. 20

Cephalotes Dejean, Spec. Gen. Col. III, 1828, p. 426, Andrewes, Trans Ent. Soc. Lond. 1919, p. 91

TYPE, *Carabus cephalotes* L. (Palaearctic region)

Head large, wide, and moderately convex, a temporal ridge or suture running back on each side from a little below the eye to the margin of the prothorax, eyes moderately prominent, placed at a little distance from the buccal fissure, a single supraorbital seta, labrum sexsetose, slightly emarginate in front, clypeus bisetose, the clypeal suture generally visible though sometimes lightly impressed; mandibles stout, with some jagged teeth at base, ligula wide and truncate at apex, bisetose, the small paraglossae, though free at apex, adjoining the ligula, but extending very little, if at all, beyond

it; mentum emarginate, with a short tooth in the emargination, sulcate (in the Indian species) though not cleft, with a pair of setæ beneath it, epilobes widening from base to apex along the inner margins of the lobes, beyond which they do not project, submentum with two or three setæ on each side, maxillæ with the outer lobe two-jointed, the inner one long, slender, curved, and densely furnished with bristles, palpi rather slender, truncate at apex, the last two joints not differing greatly in length, antennæ hardly extending beyond the base of the elytra, pubescent from and including joint 5 (but in the Indian species the apex of joint 3 and the apical half of joint 4 are setose), joint 1 fairly thick, hardly shorter than 3, 2 about two-thirds of 3, the remaining joints slightly longer than 2

Prothorax convex, cordate, strongly contracted behind, sides rounded and bordered, with two or three marginal setæ, of which the hindmost is placed well in front of the hind angle

Elytra convex, elongate, nine-striate, though the outer striae are sometimes obsolete, scutellary striole rudimentary or wanting, interval 3 without dorsal pores

Sterna. In the Indian species the prosternal process is furrowed and the metasternal process has an angular border, much more evident in *punctatus* than in the other two species. *Venter* apical segment with one seta on each side in the ♂, two in the ♀. Legs stout, the protibiae somewhat dilated towards apex, tarsi practically glabrous above, the ♂ protarsi with the first three joints dilated and clothed beneath with spongy tissue.

Range South China, North India, Irak, Arabia, palæarctic and circum-Mediterranean regions, and Canary Islands

The larva of the common palearctic species, *Broscus cephalotes* L., has been described by Schiødte (Nat Tidsskr. 1867, pp 504-7, t 19, ff 1-8), but nothing is known of the early stages of the Indian species.

Key to the Species

- 1 (2) Body winged, eyes large, genæ inconspicuous, elytra with square shoulders, the striæ very lightly impressed, metepisterna twice as long as wide *punctatus*, Dej , p 35.

2 (1) Body apterous, eyes small, genæ prominent, elytra with the shoulders obsolete, the striæ moderately impressed, metepisterna a half longer than wide

3 (4) Prothorax evidently contracted in front, its sides coarsely rugose, with two lateral setæ, episterna lightly punctate *taurulus*, Andr , p 36

4 (3) Prothorax hardly contracted in front, its sides not coarsely rugose, with three lateral setæ, episterna impunctate *bipilifer*, Andr , p 38

262 *Broscus punctatus*, Dej.

Cephalotes punctatus Dejean *, Spec Gen Col III, 1828, p 431.
Percus nepalensis Hope *, Zool Misc 1831, p 21, Dohrn, Stett. Ent Zeit 1879, p 458, Andrewes, Trans Ent Soc Lond. 1919, p 170

Broscus punctatus Putzeys, Les Broscides, Stett Ent Zeit 1868, p. 309, Bates, Scientific Results of the Second Yarkand Mission, 1891, Col. p 4; Fletcher, Agr. Res Inst Pusa, Bull. 69, 1919, p 34 (Biology); Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guz Babault, Carab 1924, p 20; Semenow, Rev Russ. Lnt XX, 1926, p 41, Andrewes, Fauna of British India, Carabidae, I, 1929, pp 24, 32, and 36
Broscus limbatus Ballion, Bull Mus 1870, II, p 327, Chaudour, Bull Mus 1878, II, p 2
Broscus baieri Semenow, Hor Soc Ent Ross XXV, 1891, p 276 (note)

Colour of the upper surface dark bronze, underside, palpi (ferruginous at apex), joints 1 to 4 of antennæ, and legs black, rest of antennæ brown

Body winged, glabrous

Head with a slight constriction immediately behind the eyes, which are large and prominent; genæ short and oblique but quite visible, frontal furrows wide and shallow, bounded on each side outwardly by a carina which extends a little beyond mid-eye level, sides with some irregular, longitudinal striation, temporal ridges moderately developed in front, fine, but not interrupted behind, submentum with two setæ on each side, surface punctate, more finely and sparsely on vertex and neck, more coarsely and closely at sides and along the neck constriction. Prothorax constricted at a little distance from base, a third wider than head, evidently though not very much wider than long, base truncate, a little narrower than apex, sides bisetose, narrowly bordered, rather faintly near base, strongly rounded in front, sinuate at a sixth from base, the hind angles right and projecting a little laterally, front seta at apical third, hind one placed well before the angle, the propleura visible from above near base, which therefore appears wider than it really is, median line moderately impressed on disk, front transverse impression shallow, asal foveæ merged in the constriction, surface punctate, microscopically on disk, moderately in front, more coarsely and somewhat confluent on the basal area, a little transverse striation along the course of the median line. Elytra moderately convex, subovate, but with square shoulders, fourth wider than prothorax, two-thirds longer than wide, the border rounding shoulder very sharply, bending backwards opposite stria 6 and terminating opposite interval 5, striate-punctate, the striae sometimes lightly impressed on the disk, but mainly formed by the punctures, which are very small,

almost disappearing at sides and behind, 8 visible and impressed close to apex, no scutellary striole; intervals flat, sometimes slightly convex on disk, marginal pores very fine, surface impunctate Microsculpture isodiametric, very distinct on the elytra, less clearly defined on the head and prothorax

Sterna more or less punctate, but the middle and sides of the prosternum and the middle of the metasternum are impunctate, as are the last four ventral segments, metepisterna fully twice as long as wide

Length, 14–17.25 mm; width, 4.75–6 mm

Distribution NORTH INDIA. common throughout the whole Himalayan tract from Peshawar to Assam and as far east as the Shan States, but not advancing far into the plains IRAK ARABIA. EGYPT

Type in Mr. René Oberthür's collection, that of *nepalensis* in the British Museum, that of *limbatus* in the Odessa University Museum, that of *batesi* in the Petrograd Academy of Sciences

A form of this species, var *davidianus* Fairmaire (Ann Soc. Ent Belg 1888, p 7), in which the upper surface is æneous, is found in Yunnan and at Hong Kong Specimens from North-East India are usually brighter than those from further west, and an example in my collection from Assam approximates the Chinese form in colour and is also blue along the marginal channels of the prothorax and elytra A blue form of the species has been met with in the Khasi Hills

This is one of the few examples among the CARABIDÆ in which "swarming" has been recorded, and notes on this and on the mode of life of the insect will be found in the Introduction to Volume I of the CARABIDÆ in this series, pp 24 and 32

263 *Broscus taurulus*, Andr.

Broscus taurulus Andrewes, Eos, III, 1927, p. 70, f 4

Colour black, rather dull; palpi more or less piceous

Body apterous, glabrous

Head moderately constricted behind the eyes, which are small but prominent, genæ conspicuous, as long as eyes and extending nearly as far outwards, frontal furrows wide and shallow, bounded on each side outwardly by a carina; temporal ridges thick in front, interrupted behind, submentum with three setæ on each side, surface coarsely and irregularly rugose-striate, punctate in the constriction, middle of front and neck smooth and impunctate *Prothorax* about a seventh wider than head and as much wider than long, base truncate, a little narrower than apex, sides bisetose, bordered, rounded

in front and sinuate at a sixth from base, hind angles right but not sharp, the propleura invisible from above, median line fairly deep, front transverse impression shallow, hind one including the foreæ near the angles deep, surface transversely rugose-striate, sides and base coarsely rugose Elytra convex, ovate, nearly a half wider than prothorax, two-thirds longer than wide, the border ending opposite stria 5 without bending backwards, the shoulders obsolete; striae moderately impressed on disk, deeper at sides, vague near apex, finely and not very

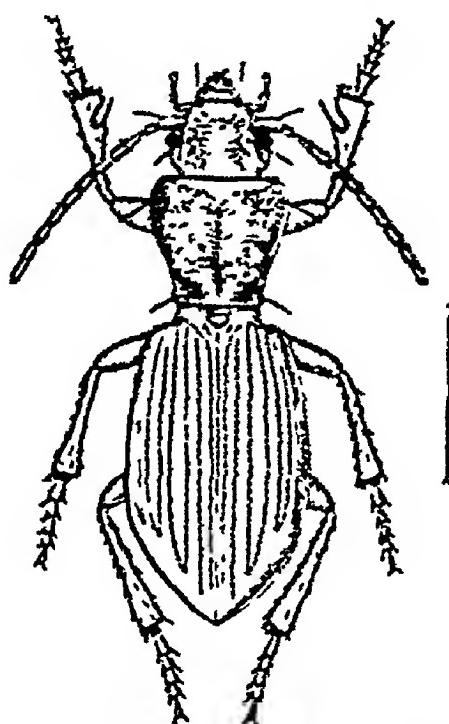


Fig 1.—*Broscus taurulus* Androwes

distinctly crenulate, scutellary striole obsolete; intervals rather flat, more convex at sides, 7 with an irregular impression close to base Microsculpture of the elytra isodiametrically asperate-punctate and very distinct, that of the head and prothorax indistinct Sternæ lightly punctate at sides, venter practically impunctate, metepisterna about a half longer than wide

Length, 17-18 mm ; width, 5 4-5 8 mm

SIKKIM Gnatong

Type in my collection

264. *Broscus bipilifer*, Andr.

Broscus bipilifer Andrewes, Eos, iii, 1927, p 71, f. 5.

Colour black, faintly æneous, palpi and antennæ more or less piceous

Body apterous, glabrous

Smaller than *taurulus* but similar in form. The head differs only in being less coarsely rugose-striate. The prothorax is a sixth wider than the head and as much wider than long, the sides converge less in front and the marginal channels widen out close to the front angles, which are more rounded, there are two lateral setæ in front instead of one, the median line is short but distinct, the front transverse impression

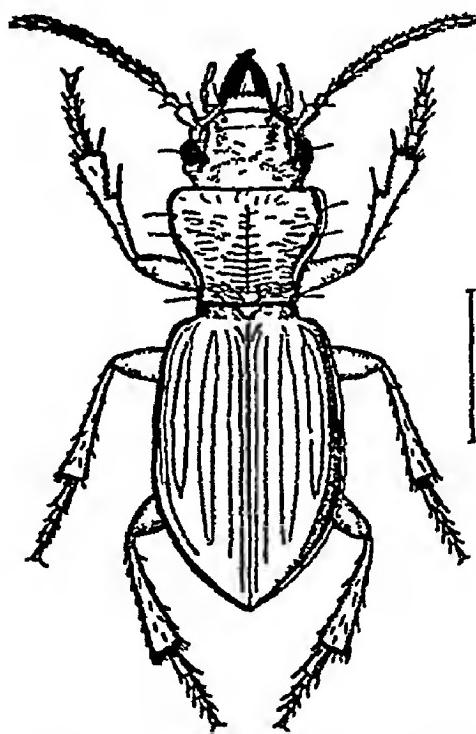


Fig. 2.—*Broscus bipilifer* Andrewes

obsolete, the hind one only moderately deep, the foveæ small, rounded, and deep, the surface with some fairly distinct transverse striation, subrugose along base, but quite without the coarse rugosity of the sides in *taurulus*. The elytra are almost exactly similar, though slightly narrower and with the outer striae a little shallower. The microsculpture is similar, but the underside is impunctate

Length, 14–15 mm., width, 4·75–5·25 mm

Distribution SIKKIM: Kobong above Gnatong.

Type in my collection

Genus CRASPEDONOTUS.

Craspedonotus Schaum, Berl Ent Zeit 1863, p 86, Putzeys, Les Broscides, Stett Ent Zeit 1868, p 314, Semenow, Hor. Soc Ent Ross XXXII, 1900, p 45, id, Rev. Russ Ent x, 1910, p 216
Pseudobroscus Semenow, Wien Ent Zeit 1888, p 248

TYPE, *Craspedonotus tibialis* Schaum (Japan and China)

Body winged, glabrous

Head large, wide, neck somewhat dilated, a slight constriction behind the eyes, temporal ridge well developed, at least in front, eyes at all events moderately prominent, distant from buccal fissure, a single supraorbital pore, labrum sexsetose, a little emarginate in front, clypeus bisetose, clypeal suture moderately impressed, mandibles long, curved, sharp at apex, with a well-developed tooth towards base, ligula and maxillæ as in *Broscus*, mentum emarginate, with a tooth in the emargination, a pair of setæ beneath it, epilobes widening from base to apex, beyond which they do not project, submentum with a single seta on each side; palpi rather short, truncate at apex, the last two joints approximately equal, antennæ extending a little beyond the base of the elytra, pubescent from the middle of joint 4, joint 1 thick, about two-thirds as long as 3, 2 less than half as long as 3, the other joints about as long as 1 and somewhat dilated at apex

Prothorax convex, cordate, strongly contracted behind, sides rounded in front and strongly sinuate before base, bisetose with a more or less crenate border

Elytra convex, ovate, punctate-striate, the area immediately behind the shoulder confusedly punctate, a scutellary striole present but often indistinct, no dorsal pores

Sterna prosternal process furrowed, metasternal process bordered, metepisterna twice as long as wide, Venter apical segment with one seta on each side in the ♂, two in the ♀. Legs stout, protibiae strongly dilated at apex, tarsal joints glabrous above, ♂ protarsi with or without dilated joints

Range Turkestan, India, China, and Japan

At present only three species have been described, one from the Himalayas, one from Turkestan, and one from China and Japan Nothing appears to be known of the life-history

265 *Craspedonotus himalayanus*, Scm [Plate IV, fig 10]

Craspedonotus himalayanus Semenow, Rev Russ Ent x, 1910, p 217, Androwes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 21, t 2, f 4

Colour black, elytra dull, joint 1 of antennæ, apex of palpi, and middle of tibiae pale ferruginous

Head with large and prominent eyes; genæ very short but conspicuous, projecting a little laterally instead of continuing the outline of the eye, and contracting sharply to the neck, frontal furrows long but shallow, bounded on each side outwardly by a thick elevated ridge, clypeal suture terminating at each end in a rounded pore, temporal ridges continued on each side to the neck by a fine carina, tooth of mentum sharp, not sulcate, upper surface of the mandibles longitudinally striate, surface irregularly striate, impunctate *Prothorax* nearly a third wider than head, a third wider than long, base evidently narrower than apex, sides strongly rounded in front, but with a slight incision on each side a little before middle, at the point where the front pore and seta are placed, immediately behind which the border is dilated, sinuate at a fourth from base, the hind pore and seta placed just below the sinuation, hind angles slightly obtuse and rather blunt, median line at middle and front transverse impression moderately deep, basal foveæ not very deep, adjoining the sides, surface lightly rugose-punctate along the front transverse impression, the base coarsely rugose, disk with some rather vague cross-striation, more evident along the course of the median line *Elytra* nearly a half wider than prothorax, fully a half longer than wide, shoulders square, border extending as far as the middle of interval 5, sides with a slight sinuation at about basal third, punctate-striate, the punctures small, the striæ deep near base, hardly impressed near apex, irregularly punctate behind shoulder, intervals convex near base but almost flat behind, surface with some fine vague cross-striation Microsculpture isodiametric, a little more conspicuous on the elytra than on the head and prothorax

Legs protarsi ♂ with the first three joints somewhat dilated and furnished with hairy pads beneath

Length, 20.5–23 mm; *width*, 8–8.75 mm

Distribution NORTH-WEST FRONTIER PROVINCE Chitral, Lut-Koh Valley, Izh (*B N Chopra*) PUNJAB Kulu, 5000–7000 feet (*C Rost*), Kangra and Baddia (*G Babault*), Parbatti Valley, 6000–8000 feet (*H G. Champion*) UNITED PROVINCES. Dehra Dun

Type in the Museum of the Academy of Sciences, Petrograd

Genus AXONYA.

Axonya Andrewes, Ann Mag Nat Hist (9) xii, 1923, p 679

TYPE, *Axonya championi* Andr (India)

Body winged, glabrous

Head rather wide, with shallow frontal furrows, temporal ridges obsolete but visible at extremities, neck only slightly

constricted, eyes large, moderately prominent, separated rather narrowly from the buccal fissure, a single supraorbital seta; ligula bisetose, truncate at apex, paraglossæ rudimentary, shorter than ligula, labrum short, exsetose, clypeus bisetose, with a longitudinal furrow on each side, mandibles short but strong, slightly toothed near base, mentum wide, with a short, sharp, slightly furrowed tooth in the sinus, at the base of which is a pair of setæ, epilobes wide, lobes slightly rounded at sides, the apex with an indentation on each side just outside the point where the lobes and epilobes join, submentum with a single seta on each side, maxillæ sharply hooked at apex, with few but stiff bristles mingled with finer hairs on the inner margin, palpi with the last joint nearly cylindrical, truncate at apex, in the maxillaries quite twice as long as the penultimate joint, in the labials a little longer only, antennæ reaching base of elytra, pubescent from the middle of joint 4, 1 stout, as long as 3, 2 hardly more than half as long as 3, the rest gradually diminishing in length towards apex.

Prothorax cordate, moderately contracted behind and slightly constricted, one marginal seta only at apical fourth

Elytra unbordered at base, sides hardly sinuate behind, the border ending in a blunt tooth in front opposite stria 5, the scutellum distinctly visible between the elytra at base, 9-striate, without scutellary striole, 1-2 and 7-9 usually reaching apex, 3-6 abbreviated behind, 8 deeper and 7 more or less interrupted before reaching apex, no dorsal pores

Sterna punctate at sides, prosternal process unbordered and with only the suggestion of a furrow, metasternal process more or less bordered by a row of punctures; met-episterna twice as long as wide. *Venter* punctate only at sides of base, apical segment with one marginal seta on each side in the ♂, two setæ placed very close together in the ♀. Legs short, the protibiae not much dilated at apex, the tarsi glabrous above, protarsi ♂ with the first three joints dilated and clothed beneath with scaly hairs

Range North India

Nothing is known of the early stages

266 *Axonya championi*, Andr [Plate IV fig. 11, a & b]

Axonya championi Andrewes, Ann Mag Nat Hist (9) xii, 1923, p 680, id, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 22, t. 2, ff 5, 5♂, and 5♀, id, Ent Month Mag 1926, p 68

Colour dark green, the elytra often metallic green at sides, surface shiny; underside black, venter piceous, joints 1 to 4

of the antennæ (rest fuscous), palpi, labrum, and tarsi ferruginous, femora and tibiae flavous

Head moderately convex, frontal furrows bounded externally on each side by a slight ridge, between which and the eye there is a deep sulcus, clypeal suture distinct, ending on each side in a pore, middle of front and vertex smooth, the furrows and neck moderately punctate *Prothorax* convex, hardly wider than head and very little wider than long, about equally contracted at extremities, sides of base oblique close to the angles, the front angles distinct and not much rounded, sides finely bordered, gently and evenly rounded to basal fifth, and there rather strongly sinuate so that the rectangular hind angles project a little laterally, median line fine, not reaching extremities, front transverse impression obsolete, hind one distinct but not deep, basal foveæ just indicated on each side close to the sinuation, surface moderately punctate, chiefly on the basal area and along the margins, nearly impunctate on each side of disk *Elytra* convex, with square shoulders and nearly parallel sides, three-fourths wider than prothorax, quite a half longer than wide, widest a little behind middle, deeply punctate-striate, the outer striae not quite reaching base, 9 punctate like the rest, without setæ, all deeper near base than apex, intervals moderately convex. Microsculpture isodiametric, fairly distinct on the elytra, hardly visible on the head or prothorax

Length, 9.5–11 mm, width, 3.6–4 mm

Distribution PUNJAB. Kangra and Nalagar (*G Babault*), Simla Hills, Asni (*B N Chopra*) UNITED PROVINCES West Almora, Haldwani, and Sarju Valley (*H G Champion*), Dehra Dun, Mothrawala, Rispana River, Kathgodam (*S W Kemp*), Lucknow, Bijnor, Naini-Tal SIKKIM Birik in the Tista Valley (*H Stevens*) BENGAL Namsoo (*Stevens*). ASSAM Abor Expedition, between Pasighat and Kobo, Dihong River (*S W Kemp*), Bhutan frontier, Mangaldai (*S W Kemp*)

Type in my collection

Mr Champion writes of this species "Common on river-banks in wet places Runs freely on the water"

Genus CHAETOBROSCUS.

Chaetobroscus Semenow, Hor Soc Ent Ross xxxiv, 1900, p. 44,
id., Rev Russ Ent x, 1910, p 215

TYPE, *Chaetobroscus anomalus* Chaud (India)

Body apterous, glabrous

The solitary species was originally described as a *Broscus*, of which genus it presents the main characters, though with a few important differences The temporal ridge is rudimentary

and there are three or four supraorbital setæ, of which the hindmost is distant from the eye, the tooth of the mentum is neither cleft nor sulcate, the submentum has three setæ on each side, joint 1 of the antennæ is slightly longer than 3 and 2 hardly shorter than 4, the apical joints, though twice as long as wide, submoniliform, the pubescence commencing at the apex of joint 3. The prothorax differs in having numerous (4 to 7) lateral setæ. The elytra are regularly oval, only moderately convex, and without scutellary striae. The prosternal process is not furrowed. The apical segment of the venter has two setæ on each side in both sexes. The upper surface of the tarsi is clothed rather sparingly with long setæ, and in the ♂ protarsi only the first two joints are dilated.

Range North India

Nothing whatever is known of the life-history

267 *Chætobroscus anomalus*, Chaud [Plate IV, fig 9]

Broscus anomalus Chaudoir *, Bull Mosc 1878, n, p 1

Chætobroscus anomalus Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 21, t 2, f 3; Jedlicka, in Visser, Karokorum, 1, 1935, p 270

Colour black, surface moderately shiny

Head with only a rudimentary neck constriction, eyes small and not prominent, genæ as long as eyes and projecting nearly as far laterally, sloping very gently to neck, frontal furrows wide, moderately deep, bounded outwardly on each side by a carina, a few fine punctures usually present on the neck and in the frontal furrows. *Prothorax* cordate, convex, basal constriction obsolete, about a fourth wider than head and as much wider than long, very little contracted in front, the apex a half wider than base, strongly contracted behind, gently rounded in front, sinuate at a little before base, the hind angles right but blunt, the hind seta placed just before base, the others disposed mainly along the front half, median line fairly deep on disk, transverse impressions very shallow, basal foveæ small but fairly deep, close to the angles, surface practically impunctate, though one or two minute pores are sometimes visible along the base. *Elytra* with the border terminating opposite stria 6, a fourth wider than prothorax, three-fifths longer than wide; striae finely punctate, sometimes clearly impressed and visible throughout, sometimes formed almost entirely by the fine punctures and obsolete at sides and behind, intervals flat, without dorsal pores. Microsculpture isodiametric, very distinct on the elytra, ill defined on the head and prothorax.

Sterna: sides of mesosternum punctate, the underside otherwise impunctate, metepisterna a half longer than wide.

Length, 12–14 mm, width, 4.5–5 mm

Distribution PUNJAB Lahul, Spiti, and Rotong Valley (*G Babault*), Seraj, Jalori Pass, 10,800 feet (*H G Champion*) KASHMIR. Nagaberan, 10,000 feet (*H B Bion*), Baltal (*E C Ansorge*), Tragbul Pass, Gilgit Road, 10,800 feet (*A Alcock*), Khelanmarg, 10,000 feet (*T B Fletcher*), Gulmarg (*M Cameron*), Shishram Nag, 12,000 feet, and Lidarwat, 9000 feet, both in the Lidar Valley (*B M Bhatta*), Gooraas Valley, 7000 feet (*J H Leech*), Sind Valley (*J A Sillem*) CHAMBA Dalhousie (*C Somers Smith*) BASHAHR Sionrin behind Chini (*W G N van der Sleen*)

Type in Mr René Oberthur's collection

There is a specimen in the British Museum labelled "Sikkim," but I suspect an error here

Genus BROSCOSOMA.

Broscosoma Rosenhauer, *Broscosoma und Laricobius, zwei neuen Käfergattungen* (Erlangen), 1846, p 1, Putzeys, Carab. gen nov 1846, p 1, Lacordaire, Gen Col 1, 1854, p 242, Putzeys, *Les Broscides*, Stett Ent Zeit 1868, p 353, Semenow, Hor Soc Ent Ross xxxiv, 1900, pp 77 and 80

TYPE, *Broscosoma baldense* Rosenh (Europe)

The characters of this genus are mainly those of *Broscus*, but with one or two striking differences, including quite a different facies, as shown in the illustrations. Head with the temporal ridge wanting or visible only on the hind part of the neck, which is strongly constricted, clypeal suture fairly deep, mandibles long and sharp at apex, tooth of mentum short, triangular, not sulcate, submentum with a pair of setæ on each side, apical joint of the maxillary palpi evidently longer than the penultimate, antennæ extending beyond the base of the elytra, joint 1 stout, a little shorter than 3, 2 very short, the rest about two-thirds as long as 3, pubescent from joint 5, but 3 and 4 are setulose at apex. Prothorax strongly constricted just before base, the front part ovoid, very convex, without lateral border, and with a single seta on each side, placed just before middle. Elytra convex, oval or ovate, striæ (except 1) never more than lightly impressed in the Indian species, the scutellary striole wanting. Microsculpture variable. Last ventral segment with a single seta on each side in both sexes (Indian species). Protarsi of ♂ with three dilated joints.

Range Europe India China Japan

Very few species are known, and each of these seems to be restricted to a very small area. Nothing is known of the early stages.

Key to the Species.

- 1 (2) Body winged; neck constriction evidently punctate, joint 1 of the antennæ twice as long as 2, prothorax with very large lateral pores, elytra with evident shoulders, a microsculpture present, metepisterna more than twice as long as wide Colour of upper surface bluish green *ribbei*, Putz , p 45
- 2 (1) Body apterous, neck constriction almost impunctate, joint 1 of the antennæ barely a half longer than 2, prothorax with small lateral pores, elytra without shoulders, no microsculpture present Colour of upper surface faintly æneous *gracile*, Andr , p 46

268 *Broscosoma ribbei*, Putz [Plate II, fig 5]

Broscosoma ribbei Putzeys*, Stett Ent Zeit 1877, p 100; Semenow, Hor Soc. Ent Ross xxxiv, 1900, p 86 (note 22), Andrewes, Trans Ent Soc Lond 1922, p 249.

Colour of the upper surface brilliant bluish green, underside and femora black, joints 1 and 2 of the antennæ, palpi, tibiae, and tarsi ferruginous, rest of antennæ brown

Body winged, glabrous

Head with a moderately deep constriction behind the eyes, which are small but fairly prominent, genæ a little shorter than eyes, sloping gently to neck; frontal furrows shallow, uneven, diverging behind, temporal ridges visible on the neck, surface with some vague cross-striation, a few punctures in the furrows and constriction Prothorax quite a third wider than head, as long as wide, base and apex of equal width, adjoining the peduncle and neck respectively, so that the angles are quite inconspicuous, the lateral pore on each side very large, median line rather shallow, front transverse impression obsolete at middle, fairly deep close to the angles, surface smooth and polished, with a little vague cross-striation, basal area closely and rather coarsely rugose-punctate Elytra ovate, the shoulders evident though rounded, about two-fifths wider than prothorax, rather less than a half longer than wide, the border not quite reaching the peduncle, stria 1 moderately deep and vaguely crenulate, 2 and sometimes 3 very lightly impressed, the other striæ generally traceable under magnification on the basal half by the fine lines of puncture, 8 impressed quite close to apex, a setiferous pore close to base on stria 2 and two close to apex approximately on striae 3 and 5, surface smooth and polished, an isodiametric microsculpture quite visible on the elytra but hardly traceable on the head or prothorax

Sterna: prosternal process furrowed, metasternal process bordered and somewhat dilated, metepisterna more than twice as long as wide Underside impunctate.

Length, 10–10.5 mm, width, 3.75–4.25 mm.

Distribution BENGAL Darjeeling, Mungphu SIKKIM Tonglu, feet 10,000 (*H. Stevens*), Gnatong, Dzalang, Debrepanti, 6000 feet (*J. C. M. Gardner*). TONG-KING

Type in the Stettin Natural History Museum

269 *Broscosoma gracile*, Andr.

Broscosoma gracile Andrewes, Eos, III, 1927, 72, f. 6

Colour black, the upper surface faintly æneous and very shiny, antennæ and legs piceous brown, palpi a little lighter

Body apterous, glabrous

Head with a deep constriction behind the eyes, which are rather flat, genæ evident but very oblique, a little shorter than eyes, frontal furrows short but moderately deep, joined in front by the clypeal suture; temporal ridges obsolete; surface

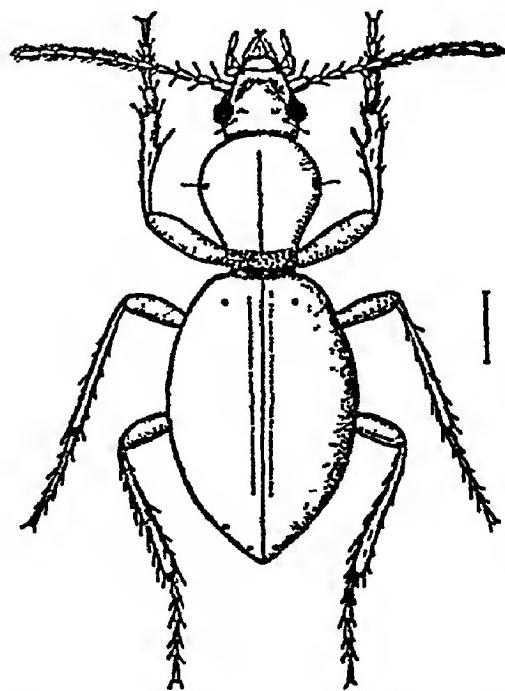


Fig. 3.—*Broscosoma gracile* Andrewes

polished, impunctate, with traces only of puncturation in the constriction Prothorax two-fifths wider than head, slightly longer than wide, but otherwise almost exactly similar to that of *ribbei* except that the lateral pores are small and the front transverse impression is obsolete throughout Elytra oval, the shoulders completely rounded away, a third wider than prothorax and twice as long as wide, the border not quite reaching the peduncle, stria I rather shallow, faintly

punctulate, not reaching either base or apex, 2 just visible on disk, rest wanting in the type though on a second specimen traces of one or two more striae are visible, 8 just indicated, surface polished, the setiferous pores as in *ribbei*. No micro-sculpture

Sterna as in *ribbei*, but the metepisterna are barely a half longer than wide, the underside impunctate

Length, 8 mm., width, 2 6 mm

Distribution SIKKIM. Gnatong and Kobong above Gnatong
Type in my collection

Group XVI TRECHINI

Numerous genera and species are comprised in this tribe, which is world-wide in its distribution, and six of the genera are met with in India, chiefly in the Himalayan region. The head is nearly always furnished with very deep frontal furrows, curving round behind and at some distance from the eyes, with two supraorbital setæ on each side (Indian species), the mandibles with a seta in the scrobe, the ligula 8-setose at apex, the paraglossæ usually slender and extending well beyond the ligula, the apical joint of the palpi pointed or, more rarely, very slender and more or less cylindrical, the penultimate joint of the labial palpi more or less setose, the antennæ pubescent throughout, the prothorax has two lateral setæ on each side and the elytra are with or without a recurrent striole. Metacoxæ contiguous

Key to the Subgroups

1 (4) Mandibles tridentate, palpi subulate, elytra without recurrent striole at apex.
(Indian species)

2 (3) Eyes pubescent, but not unusually prominent, penultimate joint of labial palpi with more than four setæ, elytra pluristriate, the border rounding shoulder and reaching stria 5, dorsal pores slight or even indistinguishable, protibiae with an external spur at apex
(Small elongate, flat, pubescent insects, generally ferruginous, sometimes piceous)

3 (2) Eyes glabrous, very large and prominent, penultimate joint of labial palpi quadrisetose, elytra each with one deep sutural stria, connected with the marginal channel by a deep sulcus running along the base, dorsal pores very conspicuous, protibiae without an external spur at apex
(A single Burmese species in the Indian region)

4 (1) Mandibles bidentate, palpi not subulate, elytra with a recurrent striole present

PERILEPTIDES, p. 48.

TRECHODIDES, p. 59

TRECHIDES, p. 61.

Subgroup I PERILEPTIDES

Four genera are comprised in this subgroup, but only two of them are found in India, the other two, containing each a single species, are found respectively in New Guinea and Madagascar. Of the two Indian genera one (*Neoblemus*) is confined to the Himalayas and Tong-king and the other (*Perileptus*) includes fairly numerous species, one of which is widely spread through the palearctic region, while others occur in Yunnan, the Philippine Is., the Malay Archipelago, North and East Africa, and Madagascar.

Key to the Genera

- | | |
|---|-------------------------|
| 1 (2) Frontal furrows not widening out into a smooth impunctate area behind the clypeus, protibiae not externally sulcate Length not exceeding 3.6 mm | PERILEPTUS, p 48 |
| 2 (1) Frontal furrows widening out into a smooth impunctate area behind the clypeus, protibiae externally sulcate Length not less than 3.8 mm | NEOBLEMUS, p 56 |

Genus PERILEPTUS.

Perileptus Schaum, Naturg. Ins. Deutschl. 1, 1860, p. 663, Putzeys, Stett. Ent. Zeit. 1870, pp. 9 and 362; Ganglbauer, Käf. Mitteleur. 1, 1892, p. 185, Bedel, Cat. rais. Col. N. Afr. 1896, p. 82, Jeannel, Tableau des espèces orientales, Ann. Mag. Nat. Hist. (9) XII, 1923, p. 396, id., Mon. des Trechimæ (1), Abeille, XXXII, 1926, p. 402

Blemus Dejean (not Stephens), Spec. Gen. v, 1831, p. 33, Castelnau, Études Ent. 1834, p. 94, id., Hist. Nat. Col. 1, 1840, p. 155

Ochthephilus Nietner (not Mulsant and Rey), Journ. As. Soc. Bengal, xxvi, 1857, p. 275, id., Ann. Mag. Nat. Hist. (2) XX, 1857, p. 275, Jeannel, Ann. Soc. Ent. Fr. 1921 (1922), p. 165

Pyrrhotachys Sloane, Proc. Linn. Soc. N. S. W. 1896, p. 374

TYPE, *Carabus areolatus* Creutzer (Palæarctic region)

Body winged, form narrow and usually flat, with more or less parallel sides, the surface finely punctate, with a sub-erect pubescence

Head wide, with large prominent pubescent eyes, narrowly separated from the buccal fissure, clypeus bisetose, divided by a transverse depression, the front part often bearing a tubercle, the hind part forming a transverse protuberant area, labrum emarginate, sexsetose, sometimes tuberculate, contracted at base, frontal sulci entire, narrow, deep, curved, and impunctate, mandibles fairly long and stout, tridentate, ligula narrow, truncate, free, with two long setæ on the under and six shorter ones on the upper surface, paraglossæ membranous, narrow extending well beyond the ligula, mentum emarginate, with a short rounded tooth in the emargination, lobes externally rounded, pointed at apex, submentum

plurisetose; maxilla with the outer lobe two-jointed, the inner one with comparatively few bristles; palpi with the apical joint subulate and very slender, penultimate joint of the maxillaries glabrous, somewhat dilated on the inner side, penultimate joint of labials setulose and dilated on the outer side; antennæ as a rule nearly reaching middle of elytra, often dilated at apex, joints 1 and 11 about equal and a little longer than the others.

Prothorax cordate, base generally produced at middle, sides each with two lateral setæ, hind angles generally sharp and sometimes with a slight carina; median line deep, the other impressions usually slight.

Elytra flat or only moderately convex, generally with square shoulders and nearly parallel sides, border rounding shoulder and reaching stria 5, interval 5 being slightly raised at this point, stria shallow, punctate, 1 entire and not bent backwards at apex along the border, scutellary striole slight; intervals nearly flat, two dorsal pores adjoining stria 3 at about a fifth and three-fifths, often indistinguishable from the punctures in the striae, a third pore near apex. Microsculpture sometimes wanting, but usually there is a fine reticulation of isodiametric meshes on the elytra.

Sternum: prosternal process unbordered. *Legs* short, the protibiae not externally grooved, tarsal joints short, 4 with a spine on the under surface extending forward between the claws, which are smooth, protarsi ♂ with two dilated joints.

Range. The species are not numerous, and are distributed throughout the Old World but not in America.

Nothing is known of the life-history of these insects, but the habitat of the Indian species is "river-banks." Nietner writes at the end of the description of his *P. ceylanicus*: "The habits of the insect are those of the *Bembidion*, in whose society it lives upon the banks of rivers, taking, like them, readily to its wings. I have found it occasionally in considerable numbers upon the sandy banks of the Mahá Oya in the neighbourhood of Negombo close to the edge of the water."

Key to the Species

- 1 (8) Elytra flat, with square shoulders and nearly parallel sides Length not less than 2.5 mm
- 2 (7) Eyes large, gone less than half as long as eyes, elytra not more than three-fourths longer than wide Length not exceeding 3.2 mm
- 3 (4) Prothorax with base hardly narrower than apex and scarcely produced, the hind angles right and not projecting laterally, microsculpture present on the elytra

[p. 50.]

robustus, Jeann.,

E

- 4 (3) Prothorax with its base evidently produced, a sixth narrower than apex, the hind angles slightly acute and projecting a little laterally
- 5 (6) Prothorax with its sides moderately dilated and rounded behind the front angles, elytra pale at apex, striae 6 and 7 obsolete, microsculpture present on the elytra .. .
- 6 (5) Prothorax with its sides strongly dilated and rounded behind the front angles, elytra dark at apex, striae 6 and 7 distinct; no microsculpture
- 7 (2) Eyes small, genæ two-thirds as long as eyes, elytra fully twice as long as wide, microsculpture present on the elytra Length 3 6 mm
- 8 (1) Elytra moderately convex, oval. Length less than 2 5 mm
- 9 (10) Prothorax with its base two-thirds as wide as apex, a small but distinct carina in the hind angles, elytra with a dark patch at apical third, without microsculpture Length 2 45 mm
- 10 (9) Prothorax with its base three-fourths as wide as apex, only a rudimentary carina in the hind angles, elytra uniformly ferruginous, a microsculpture present. Length 2 1 mm .. .

[p. 51.
ceylanicus, Niestn.,

imicus, Jeann., p. 53.

microps, sp nov., p 54

cameroni, Jeann., p 54

[p. 55.
birmanicus, Jeann.,

270 -*Perileptus robustus*, Jeann

Perileptus robustus Jeannel *, Ann Mag Nat. Hist. (9) xii, 1923,
pp. 397 and 398, f 1, id, Mon (1) p. 415, f 190.

Colour ferruginous; joints 4 to 11 of the antennæ, lateral margins of the prothorax and elytra, metasternum, and ventral surface black Pubescence somewhat scanty and inconspicuous.

Head fairly large, with deep curved impunctate furrows extending from front to back, clypeus with a small central tubercle, labrum practically without tubercle; eyes large and prominent, three times as long as genæ, antennæ stout, not quite reaching middle of elytra Prothorax moderately convex, cordate, a little wider than the head, a third wider than long, base slightly produced at middle, barely narrower than apex, sides rounded in front, gently sinuate before base, hind angles sharp, right, not projecting laterally, and with a rudimentary carina, median line wide and deep, the other impressions slight, base coarsely rugose-punctate, the disk moderately punctate Elytra flat, with nearly parallel sides, about a third wider than prothorax, three-fifths longer than wide; striae lightly impressed and finely punctate, 1 only reaching base and apex, 7 and 8 obsolete, intervals moderately

convex, dorsal pores somewhat indistinct, surface very finely and sparsely punctate. Microsculpture of the elytra formed by isodiametric meshes, none on the head and prothorax.

Length, 2 8-2 9 mm

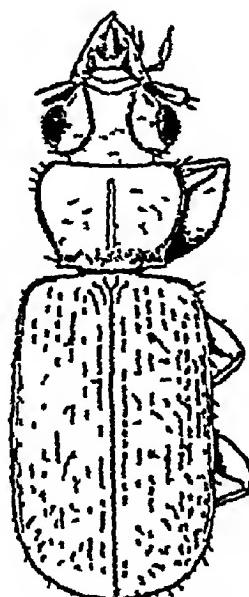


Fig 4.—*Perileptus robustus* Jeannel.

Distribution UNITED PROVINCES. Garhwal, Siuni Gad; West Almora; Ranikhet (all H. G. Champion).

Type in the British Museum

271 *Perileptus ceylanicus*, Niels.

Ochihephilus ceylanicus Nietner *, Journ As Soc Beng. xxvi, 1857, p 136, id, Ann Mag Nat Hist (2) xx, 1857, p 276

Perileptus ceylanicus Putzeys, Stett. Ent. Zeit 1870, p 363, Jeannel, Ann Mag Nat Hist. (9) xii, 1923, pp 397 and 401, f 3, id, Mon. (i) p 416, f 191, Andrewes, Ann. Mag Nat Hist (9) xix, 1927, p 106

Perileptus indicus Jeannel *, Ann. Mag. Nat. Hist (9) xii, 1923, pp 397 and 399, f 2, Andrewes, Ent. Month Mag 1926, p 68, Jeannel, Mon. (i) p 417, id, Mon. (iv), Abeille, xxxiv, 1930, p 62

Colour ferruginous, head and underside a little darker, joints 3 to 11 of the antennæ brownish, lateral margins and suture of the elytra at least to some extent fuscous. Pubescence sparse but not very short.

Head large, with deep curved impunctate furrows; clypeus with a slight central tubercle, labrum with a more conspicuous one, eyes large, genæ very short, curving round sharply to the neck, antennæ a little dilated at apex, nearly reaching middle of elytra, surface with very scanty pubescence. *Prothorax* moderately convex, cordate, barely wider

than head, a fourth wider than long, base produced at middle, its sides both oblique and slightly emarginate, about a sixth narrower than apex, sides rounded in front, rather sharply sinuate close to base, the hind angles sharp, a little acute, and projecting slightly laterally, with hardly a rudiment of a carina, median line moderately deep, the surface surrounding it usually depressed, transverse impressions slight, basal foveæ small, surface finely and fairly closely punctate, basal area subrugose. *Elytra* flat, with nearly parallel sides, slightly compressed behind shoulders, a fourth wider than prothorax, nearly three-fourths longer than wide, striæ finely punctate, shallow, 1 deeper behind, 2 to 5 distinct on disk, disappearing before apex, outer striæ obsolete, intervals slightly convex, 1 raised behind, dorsal pores distinct, surface finely and not very closely punctate Microsculpture as in *robustus*.

Length, 2 5-3·2 mm.

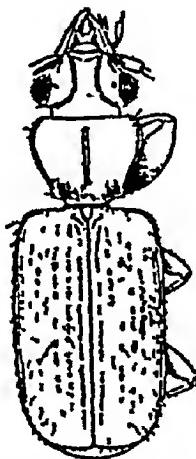


Fig 5.—*Perileptus ceylanicus* Nietner (The figure is that of
P indicus Jeannel)

Distribution. BOMBAY: Poona (G E Bryant) UNITED PROVINCES. Dehra Dun and Raipur Forests (M Bose), Asan River (J C M. Gardner), Nim Nadi (M Cameron), Mothrawala, Rispana River, Phandowala, Suswa River, West Almora, Haldwani, Tanakpur, Ranikhet Sarju Valley, Bodyar, and River Song (H. G Champion) SIKKIM Gielle Khola in the Tista Valley (H Stevens) EASTERN DUARS (H Stevens) ASSAM. Garo Hills, Someswari River (S W. Kemp and B Chopra), Manipur, Shugnu (S N Chatterjee) BURMA Tavoy (R N Parker). CEYLON. Negombo, Mahá Oya River (J Nietner)

Type The specimen treated here as the type is the only Singhalese example seen, it was taken by Nietner in Ceylon and is now in the Stettin Museum, where it is marked as having been "seen by the author." The type of *indicus* is in the British Museum

The only difference I have been able to detect between *ceylanicus* and *indicus* is in the antennæ. In the Indian form these are long, with the apical joints sometimes brown, sometimes nearly black; in the Poona specimen the antennæ (except joints 1 and 2) are unfortunately missing, but in the Stettin example, which is no doubt the specimen from the Bohrn collection mentioned by Putzeys, the antennal joints are somewhat shorter and rather lighter in colour. Nietner in his description says that the antennæ are "long and thick," but he does not expressly refer to their colour.

272. *Perileptus imaiicus*, Jeann.

Perileptus imaiicus Jeannel *, Ann. Mag. Nat. Hist. (9) xi, 1923,
pp 397 and 405, f. 6, id., Mon. (1) p 425, f. 201.

Colour piceous beneath, upper surface dark red, apex and lateral margins of the elytra, with joints 4 to 11 of the antennæ, piceous or black, palpi, joints 1 to 3 of the antennæ, apical border of the elytra, and legs more or less ferruginous. Pubescence sparse but formed by fairly long hairs, and therefore fairly conspicuous.

Head large, with deep curved impunctate furrows; both clypeus and labrum with a slight central tubercle, eyes large, genæ nearly half as long and curving round sharply to neck, antennæ reaching middle of elytra, slightly dilated at apex; surface very sparsely punctate. Prothorax moderately convex, cordate, a little wider than head, about a third wider than long, base strongly produced at middle, its sides emarginate, about a sixth narrower than apex, widest at about a fifth from apex, front angles strongly rounded, sides rounded in front, contracted sharply behind, and sinuate close to the hind angles, which are sharp, slightly acute, project a little laterally, and are furnished each with an evident carina; median line fairly wide and deep, basal foveæ fairly deep and continued forward on each side as a shallow sulcus, parallel with the sides, disk finely and sparsely punctate, the sides more closely and irregularly, the base rugose-punctate. Elytra flat on disk, moderately convex at sides, which are nearly parallel, a third wider than prothorax, two-thirds longer than wide, striae well marked by very clear punctures, but disappearing behind, except 1, which is rather deep towards apex, 8 only obsolete, intervals practically flat, finely and sparsely punctate, the dorsal pores hardly distinguishable from those in the striae. No appreciable microsculpture.

Length, 2 5-3 1 mm.

Distribution PUNJAB. Khotkai (C F C Beeson). BENGAL: Gopaldhara and Rongni Valley (H Stevens). EASTERN DUARS (H. Stevens). ASSAM. Manipur, Shugnu (S. N. Chatterjee).

UNITED PROVINCES : West Almora and Upper Gumti Valley (*H. G. Champion*) ; Almora, Dwarahat (*R. N. Parker*), Garhwal, Siuni Gad (*H. G. Champion*), Chakrata, Sainja (*M. Cameron*), and Binal Gad (*S. N. Chatterjee*)

Type in the British Museum

273. *Perileptus microps*, sp nov. [Plate I, fig. 4]

Colour ferruginous, lateral borders of prothorax and elytra piceous Pubescence short and rather scanty.

Head large, with deep curved impunctate furrows, surface subrugose at sides, clypeus and labrum each with a fairly conspicuous tubercle, eyes moderately prominent but rather small, the genæ consequently more conspicuous than usual, convex, and about two-thirds as long as eyes; antennæ stout, not quite reaching middle of elytra. Prothorax a little convex, cordate, just wider than head and also slightly wider than long, base somewhat arcuate, a fifth narrower than apex, sides gently rounded and sinuate near base, the hind angles sharp but somewhat obtuse, not projecting laterally, and without carina, median line moderately wide and deep, a small rounded impression at middle on each side of it, the other impressions slight, disk moderately punctate, base rugose-punctate along the margin. Elytra long and flat, with square shoulders and nearly parallel sides, a fourth wider than prothorax, quite twice as long as wide, striae 1 to 5 lightly impressed and finely punctate, 6 to 8 obsolete, 1 only reaching apex and becoming obsolete before reaching base, intervals rather flat, dorsal pores visible though inconspicuous, surface finely and sparsely punctate. Microsculpture as in *robustus*.

Length, 3 6 mm

Distribution UNITED PROVINCES. Dehra Dun (*J. C. M. Gardner*)

Type in the British Museum

274 *Perileptus cameroni*, Jeann

Perileptus cameroni Jeannel *, Ann Mag Nat Hist. (9) xii, 1923, pp 397 and 407, f. 7, id, Mon (1) p 427, f 205

Colour light ferruginous, the elytra each with a vague dark patch at apical third, apical fourth of elytra and legs flavous, the border of both prothorax and elytra darker. Pubescence pale, formed by rather long hairs, scanty on the head and prothorax, arranged on the elytra in single lines, inclined backwards down the middle of each interval

Head fairly large, almost impunctate, the furrows deep and subangulate at mid-eye level, clypeus and labrum without tubercle, eyes large and prominent, genæ very short, oblique,

antennæ stout, moniliform, dilated towards apex, reaching basal fourth of elytra. Prothorax convex, cordate, about a sixth wider than head and as much wider than long, base truncate, about two-thirds as wide as apex, sides strongly rounded in front, sinuate a little before base, the hind angles sharp but slightly obtuse, not projecting laterally, and with a small but evident carina at right angles to the base; median line deep, widening behind, base depressed, coarsely rugose-punctate, disk rather sparsely punctate, with punctures of unequal size. Elytra convex, oval, slightly compressed at middle, a fourth wider than prothorax, three-fifths longer than wide, striae lightly impressed but clearly punctate, I only entire and nearer the suture at extremities than at middle, the outer striae indicated mainly by irregular punctures;

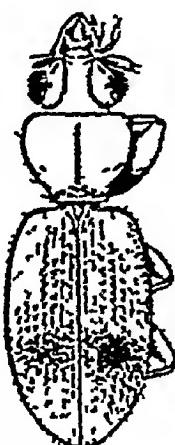


Fig. 6.—*Perileptus cameroni* Jeannel

intervals faintly convex, dorsal pores hardly distinguishable from the punctures in stria 3. No appreciable microsculpture.

Length, 2 45 mm.

Distribution UNITED PROVINCES. Dehra Dun, Kaligad (*M. Cameron*) BENGAL. Ghum district (*M. Cameron*). ASSAM. Manipur, Shugnu (*S. N. Chatterjee*)

Type in the British Museum

This species differs a good deal from the other Himalayan species in the convexity of its form, in its oval elytra with a single line of setæ down the middle of each interval, and the dark patch on each elytron.

275 *Perileptus birmanicus*, Jeann [Plate I, fig. 2]

Perileptus birmanicus Jeannel *, Mon (iv), Abeille, xxxiv, 1930,
p 62

Colour ferruginous, the prothorax paler than the head and elytra, apex of antennæ, border, base, and apex of prothorax,

and border of elytra more or less brown. Pubescence very scanty.

Head large, with deep curved furrows ; clypeus with a small tubercle, but none on labrum ; eyes large, genæ very short and inconspicuous, antennæ submoniliform, dilated at apex, reaching middle of elytra. *Prothorax* convex, cordate, a sixth wider than head, a fourth wider than long, base only a little produced at middle, its sides slightly oblique, a fourth narrower than apex, sides well rounded in front, strongly contracted behind, sinuate close to base, hind angles right, sharp, projecting a little laterally, with a rudimentary carina, median line deep and wide, base a little depressed, rugose-punctate, surface generally sparsely and irregularly punctate. *Elytra* moderately convex, a fourth wider than prothorax, a little more than a half longer than wide ; striæ lightly impressed, punctate, the five inner ones distinct, 6 indicated by one or two punctures towards base, 7 and 8 wanting, 1 only reaching base and apex, intervals slightly convex, 1 raised behind, an irregular line of minute punctures down the middle of each, dorsal pores indistinct. Microsculpture as in *robustus*

Length, 2·1 mm

Distribution BURMA · Shwebo division, Kyauktan (*H G Champion*)

Type in the British Museum. The type is at present unique

Genus NEOBLEMUS.

Neoblemus Jeannel, Ann Mag Nat Hist (9) XII, 1923, p. 409,
id., Mon des Trichinæ (1), Abeille, XXXII, 1926, p. 432

TYPE, Neoblemus championi Jeannel (Himalayas)

Body winged, rather sparsely pubescent, similar in appearance to *Perileptus*, but the sulci on the head are of a different form and the protibiae are externally grooved

Head large, eyes as in *Perileptus*, clypeus transverse, convex, slightly arcuate in front (convex forwards) and more strongly arcuate behind (convex backwards), frontal sulci entire, wide, deep, impunctate, curving on each side from the lateral extremity of the clypeus to a point behind the gena, widening out into a smooth impunctate area behind the clypeus, labrum deeply emarginate, sexsetose, sometimes tuberculate, contracted at base, mentum with a tooth of moderate size in the emargination, rounded or truncate at apex, buccal organs as in *Perileptus*; antennæ long and filiform, extending beyond the middle of the elytra, joints 2 and 4 a little shorter than the rest. *Prothorax* and *elytra* hardly differing from the same parts in *Perileptus*, but there is no evident microsculpture present. *Legs* with protibiae

straight, slender, and externally grooved, the spine on the underside of tarsal joint 4 and the dilated joints in the ♂ protarsi as in *Perileptus*.

Range The Himalayas and Tong-king.

Key to the Species

- | | |
|--|--------------------------------|
| 1 (2) Genæ only slightly convex, shorter than eyes ; elytra brown-red with dark apex, the puncturation of the striae distinct, protibiae with a deep external groove | [p. 57.]
championi, Jeann., |
| 2 (1) Genæ very convex, longer than eyes, elytra ferruginous, the puncturation of the striae indistinct ; protibiae with a shallow external groove | [p. 58.]
andrewesi, Jeann., |

276 Neoblemus championi, Jeann.

Neoblemus championi Jeannel *, Ann Meg Nat Hist (9) xi, 1923, pp 410 and 411, id., Mon. (1) p 434

Colour reddish brown, metasternum, sides of head, sometimes disk of prothorax, margins, suture, and apical third of elytra piceous ; legs and apical border of elytra ferruginous.

Head wide, eyes large and prominent, genæ shorter than eyes, slightly convex, contracting rapidly to the neck constriction, neck and convex area between the sulci impunctate, smooth, and shiny, the latter triangular, the apex of the triangle in front just reaching the clypeal suture, the genæ and clypeus covered rather sparsely with long hairs, very long behind, directed mainly inwards, labrum with a slight tubercle at middle. Prothorax cordate, slightly convex, as wide as head, a third wider than long, apex a third wider than base, sides reflexed, rounded in front and sinuate at about a fifth from base, the hind angles somewhat acute, sharp, projecting laterally, but not reflexed, median line deep and wide but contracting at extremities, basal area rather coarsely rugose-punctate. Elytra flat, with parallel sides, a third wider than prothorax, two-thirds longer than wide ; punctate-striate, the four inner striae moderately impressed on disk but not quite reaching base, 5 visible, the outer striae obsolete, 1 reaching apex, 2 to 4 disappearing before apex ; intervals a little convex on disk only, dorsal pores on stria 3, placed not far from base, and just behind middle, surface shortly pubescent and finely punctate, the punctures smaller than those in the striae. Legs : protibiae with a deep external groove.

Length, 3.8-4.2 mm

Distribution. UNITED PROVINCES : Mussooree, Mossy Falls (*M. Cameron*), Dehra Dun (*M. Cameron* and *S. N. Chatterjee*), Raipur Forests (*M. Bose*), and Nagal ; West Almora, Upper

Gumti Valley, and Haldwani (all *H. G. Champion*) BENGAL
 Gopaldhara and Namsoo (*H. Stevens*) EASTERN DUARS
 (*H. Stevens*)

Type in the British Museum

277. *Neoblemus andrewesi*, Jeann.

Neoblemus andrewesi Jeannel*, Ann Mag Nat Hist (9) xii,
 1923, pp 410 and 413, f 9, id., Mon (1) p 436, ff. 222 and 223.

Colour ferruginous, legs pale ferruginous

Head large, eyes rather small but moderately prominent, genæ convex, rather longer than eyes, sulci not quite so deep as in *championi*, the apex of the convex area on front not quite reaching the clypeal suture, the whole surface except the sulci sparsely punctate and pubescent, but less conspicuously

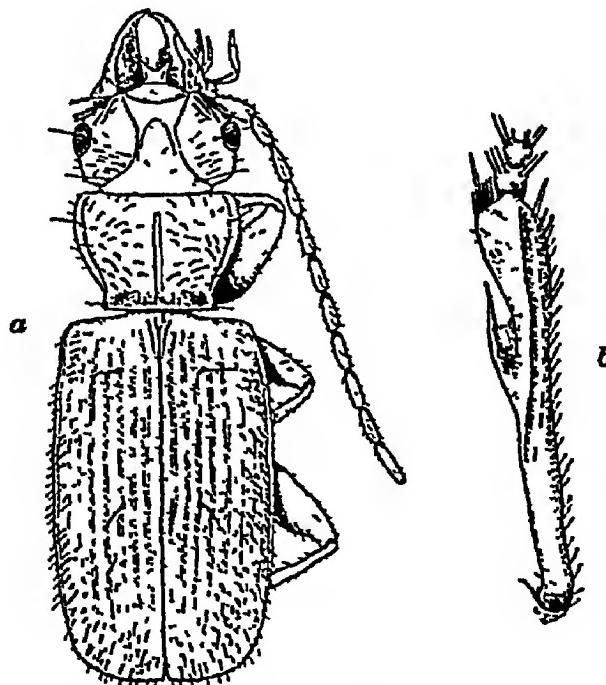


Fig. 7 —(a) *Neoblemus andrewesi* Jeannel; (b) external aspect of right protibia

than in *championi*, labrum without tubercle Prothorax cordate and slightly convex, a little wider than head and a third wider than long, very similar to that of *championi*, but the lateral margins are less reflexed, the median line is rather shallower, the transverse impressions are more evident, and the basal area is less coarsely rugose-punctate Elytra flat, with nearly parallel sides, a third wider than prothorax and fully three-fourths longer than wide, striation and surface

as in *championi*, but the puncturation of the striae is very indistinct. Legs: protibiae with a shallow external groove

Length, 3.8-4.6 mm.

Distribution. UNITED PROVINCES. Dehra Dun, River Song (S. N. Chatterjee and M. Cameron); Haldwani (H. G. Champion).

Type in the British Museum

Subgroup II. TRECHODIDES

Of the nine genera which form this subgroup only one occurs in the Indian region, and that is represented in Eastern Asia by one species found in northern Burma and another one in the mountains of the Philippine Is. Other species of this genus inhabit Australia, Madagascar, and South Africa, and those of the other eight genera are nearly all distributed in the same regions, though one has been discovered as far south as the Crozet Is. and one occurs in Europe, examples of which have been met with, though very rarely, in England

Genus TRECHODES.

Trechodes Blackburn, Trans Roy. Soc. S. Austr. **xiv**, 1901, p. 119.
Jeannel, Mon des Tachinæ (1), Abeille, **xxxii**, 1926, p. 484

TYPE, *Trechodes secalivoides* Blackburn (Australia)

Body winged, form and general appearance those of the species of *Tachys* belonging to the *fasciatus*-group

Head with large hemispherical glabrous eyes, very narrowly separated from the buccal fissure, clypeus transverse, quadrisetose, labrum transverse though rather narrow, its sides nearly parallel, apex sexsetose and deeply emarginate, frontal sulci impunctate, entire, narrow but deep, approaching each other most nearly at mid-eye level, thence bending outwards and terminating on each side behind the genæ, mandibles fairly stout, tridentate, hooked at apex, ligula narrow, rounded at apex, with two long setæ at middle and three shorter ones on each side, paraglossæ membranous, very narrow, and extending well beyond the ligula; mentum emarginate and with a blunt tooth in the emargination, a pair of setæ at the base of the tooth, submentum quadrisetose, palpi with the apical joint subulate and very slender, penultimate joint of the labials with four or five setæ, two of them placed on the inner margin towards apex; antennæ nearly reaching middle of elytra, joint 2 shorter than the rest, the apical joints long and slender.

Prothorax subcordate, transverse, the median third of the base rather strongly produced, sides bisetose, well rounded in front and strongly contracted behind, front angles rounded

away, hind ones small but somewhat variable, the normal impressions not more than moderately deep

Elytra subquadrate, moderately convex, basal border entire, only stria 1 and part of stria 8 present, the apical and the two dorsal pores large and isolated, so that they stand out very distinctly

Legs rather short, the protibiae externally grooved, fourth tarsal joint with a slight membranous expansion beneath, protarsi ♂ with two strongly dilated joints

Range Burma, Philippine Is., Australia, Madagascar, and Africa

278. *Trechodes cauliops*, Bates

Trechus cauliops Bates *, Ann Mus Civ. Gen. xxxii, 1892, p. 298.

Trechodes cauliops Jeannel, Ann Mag. Nat. Hist. (9) xi, 1923, p. 415, f. 10, id., Mon. (1) p. 490, ff. 262-3, and p. 494, f. 271.

Colour piceous, antennæ and elytra near apex reddish brown, palpi and legs flavous

Head fairly wide, front depressed, eyes very prominent, hemispherical; genæ oblique, shorter than eyes, frontal

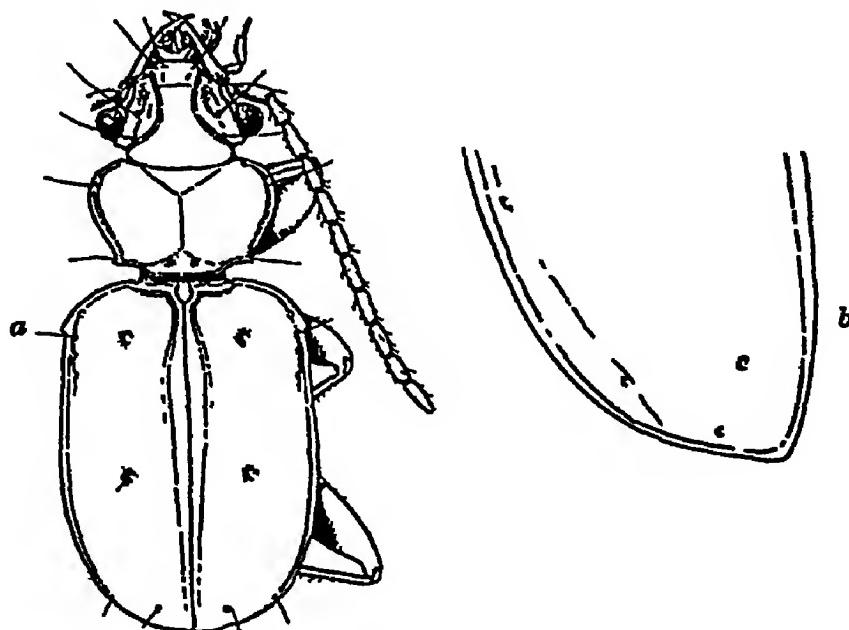


Fig. 8 —(a) *Trechodes cauliops* Bates, (b) apex of left elytron

sulci entire, curved, impunctate, deep, almost linear, clypeal suture deep, front supraorbital pore very large, sides between the sulcus and the eye somewhat hollowed out and uneven, surface impunctate. *Prothorax* convex, about a fourth wider than head, two-thirds wider than long, base rather wider than

apex, the median lobe short, bordered, somewhat arcuate, sides strongly rounded in front, hind angles projecting on each side as a rounded tooth, on which is the hind lateral pore; median line and front transverse impression shallow, marginal channel wide, terminating on each side at the hind lateral pore, basal sulcus deep, almost interrupted at middle, surface impunctate. Elytra moderately convex, a third wider than prothorax, not quite a half longer than wide, border with a tooth on each side just below the shoulder, stria 1 is very deep and 2 just visible, 8 widely interrupted at middle, the pores of the marginal series very conspicuous in front and behind, the sutural interval a little raised and widening out on disk, front dorsal pore placed midway between striae 1 and 8, the hind pore nearer stria 1. No microsculpture

Length, 36 mm.

Distribution BURMA: Karen Hills (*L. Fea*)

Type in the Genoa Civic Museum

This is the only species known from the Indian region, and only one other species is known from the Oriental region, viz., *T. bakeri* Jeann from the Philippine Is.

Subgroup III *TRECHIDES*

This subgroup contains a large number of genera and subgenera, with an enormous number of species, which people nearly all the mountain ranges of the holarctic region together with those of Abyssinia and East Africa. In some genera, the species of which live more or less in the open, the eyes are well developed, but there are also numerous cavernicolous genera in which the eyes are rudimentary or wanting. No species of the latter group has been found in any of the Indian caves hitherto explored, so that all those dealt with here have well developed eyes. Three genera occur in India, and may be distinguished as follows:—

Key to the Genera

- 1 (2) Elytra each with two dorsal pores, protibiae glabrous at apex (Indian species) TRECHUS, p 62

2 (1) Elytra each with one dorsal pore; protibiae with at least a few small hairs at apex.

3 (4) Body winged, eyes larga, gena small and inconspicuous; prothorax not much contracted behind; elytra with deep striae and fairly prominent shoulders. AGONOTRECHUS, p 74.

4 (3) Body apterous; eyes small and flat, gena large and convex; prothorax strongly contracted behind, elytra with rudimentary striae, only the inner ones visible, shoulders almost effaced. STEVENSIUS, p 78.

Genus TRECHUS.

Trechus Schellenberg, Helv Ent II, 1806, p 23, Dejean, Spec Gen V, 1831, p 2, Pandellé, in Grenier, Mat Faune Col Fr II, 1867, p 131, Putzeys, Trechorum oculatorum Monographia, Stett Ent Zeit XXXI, 1870, p 7; Ganglbauer, Käf Mitteleur. I, 1892, p 186; Jeannel, Ann Mag Nat Hist (9) XII, 1923, p. 415, id, Mon des Trechines (II), Abeille, XXXII, 1927, p 114, id, Mon. (III), Abeille, XXXV, 1928, p 790.

Blemus Stephens, Ill Brit Ent Mand I, 1827, p. 67, and 1828, p 171

TYPE, *Carabus quadristriatus* Schrank (Palæarctic region)

Body winged or apterous, moderately convex, glabrous, colour black, red, or ferruginous

Head with the frontal furrows entire and deep, diverging in front and behind (Indian species), sometimes obtusely angulate at middle, eyes generally large in relation to the genæ, narrowly separated from the buccal fissure; clypeus transverse, quadrisetose, labrum generally emarginate, sex-setose; mandibles fairly stout, bidentate, ligula subquadrate, convex at apex, 8-setose, two long setæ at middle and three shorter ones on either side, paraglossæ narrow, tapering, extending far beyond ligula; mentum emarginate and with a bifid tooth in the emargination (except *indicus*), a pair of setæ beneath the tooth, submentum quadrisetose, palpi with the last two joints approximately equal, the apical joint tapering to a blunt point, the penultimate tapering towards base, the apex of the latter sometimes with one or two fine setæ in the maxillaries, quadrisetose in the labials, antennæ variable but often submoniliform, at least towards apex, in the Indian species

Prothorax subquadrate, contracted behind, sides rounded in front and sometimes sinuate behind, bisetose, median line fairly deep, front transverse impression often obsolete, base depressed, basal sulcus and foveæ variable but usually deep

Elytra of variable form, the shoulders conspicuous in the winged but effaced in the wingless species, border rounding shoulder and reaching a point opposite stria 5, striae often obsolete at the sides and behind, the inner ones generally fairly deep on disk, 1 and usually 2 entire, scutellary striole generally well developed, a deep recurrent striole at apex which terminates opposite though often without reaching the extremity of stria 5, intervals smooth and impunctate, more or less convex on disk, 2 widening out close to apex, 3 nearly always with two dorsal pores adjoining stria 3, a third pore near apex Microsculpture only slightly developed.

Legs rather slender, the femora sometimes dilated, the

proboscis nearly always externally grooved, the protarsi ♂ with two dilated joints

Range. Numerous species of this genus have been described, distributed through the palaeartic and nearctic regions, the Mediterranean basin, the Himalayas, and the Philippine Is., the great majority being found in the great mountain chains of the Old World, sometimes at high altitudes. Until comparatively recently only a single species had been found in the Himalayas, but as this vast chain of mountains is more fully explored it seems certain that many more species will be discovered there.

The larvæ of a number of palaeartic species have been described, but nothing is known regarding the life-history of the Indian species, specimens of which have been found generally in damp places, under moss, or near streams.

Key to the Species.

- 1 (6) Body winged, eyes large and prominent, much longer than genæ, elytra with prominent shoulders
 - 2 (5) Eyes four times as long as the genæ; aedeagus tapering, elongate, and hooked at extremity (see illustration)
 - 3 (4) Colour brown or piceous, sometimes slightly iridescent
 - 4 (3) Colour black, iridescent
 - 5 (2) Eyes six times as long as the genæ, aedeagus thick and only slightly hooked at extremity (see illustration)
 - 6 (1) Body apterous
 - 7 (8) Eyes large and prominent, three times as long as genæ, elytra with evident shoulders Colour red, surface very shiny
 - 8 (7) Eyes less prominent and often flat, never much longer than genæ, elytra oval, the shoulders more or less effaced.
 - 9 (14) Elytra with striae 1 to 3 at least moderately impressed Fairly large species, rarely less than 4 mm. in length -
 - 10 (13) Head with the frontal furrows regularly curved, microsculpture of the elytra barely visible Colour mainly piceous
 - 11 (12) Prothorax a half wider than head, its base a little wider than apex, the basal foveæ deep, separated on each side from the hind angles by a slight raised space, elytra with the three inner striae only moderately impressed, but all the striae visible... . . . *imarcus*, Jeann., p. 68
- indicus*, Putz., p. 64
indicus var. *championi*,
[Jeann., p. 65.
macrops, Jeann., p. 67.
[Jeann., p. 66
indicus var. *macroderus*,

12 (11) Prothorax about a third wider than head, its base as wide as apex, the basal foveæ deep, almost adjoining hind angles, elytra with the three inner striae deep, the outer ones obsolete

13 (10) Head with the frontal furrows angulate at middle, basal foveæ of the prothorax rounded and only moderately deep, not adjoining the hind angles, microsculpture of the elytra formed by fine transverse lines Colour ferruginous, with the apical half or two-thirds of the elytra black

14 (9) Elytra with striae 1 to 3 at most lightly impressed Rather small species, rarely attaining 4 mm in length

15 (20) Antennæ with joints 2 and 3 equal in length, elytra widest at middle, the outer striae obsolete. Length rarely less than 3 mm.

16 (19) Head with the frontal furrows deep and curved, apical joints of the antennæ oval, prothorax with its base a little wider than apex, the basal foveæ small but deep

17 (18) Elytra with the two inner striae lightly impressed, striae 3 to 5 visible

18 (17) Elytra with the two inner striae quite superficial, the other striae obsolete

19 (16) Head with the frontal furrows angulate at middle, apical joints of the antennæ subcylindrical, prothorax with its base as wide as apex, the basal foveæ obsolete

20 (15) Antennæ with joint 2 shorter than 3, elytra widest behind middle, all the striae visible Length 2.8 mm.

[p. 69.
kingstoni, Jeann.,

beesoni, Jeann., p. 70

cameroni, Jeann., p. 71.
[Jeann., p. 72.
cameroni var. bistratus,

[p. 72.
thibetanus, Jeann.,
[p. 73
pumilio, Jeann.,

279 *Trechus indicus*, Putz.

Trechus indicus Putzeys *, Mon. p. 175; Andrewes, Trans Ent Soc Lond 1922, p. 247, Jeannel, Ann. Mag. Nat. Hist. (9) xu, 1923, p. 416, f. 11, id., Mon. (u) pp. 157 and 158; id., Ann. Mag. Nat. Hist. (10) 1, 1928, p. 284, Andrewes, Trans Ent Soc Lond 1930, p. 3

Colour brown or piceous, shiny, and slightly iridescent, the lateral margins of the prothorax and elytra generally a little paler than the disk, palpi, joint 1 of antennæ, and legs more or less flavous.

Body winged. Head with deep furrows, converging to mid-eye level, where they are obtusely angulate, and thence curving round on each side behind eyes. Eyes fairly large and convex; genæ very small, antennæ reaching basal third of elytra, slightly dilated and submoniliform towards apex, the joints approximately equal, except 3 and 11, which are

a little longer than the rest; tooth of mentum slightly sulcate, but not bifid. Prothorax subquadrate, moderately convex, about a third wider than head and a half wider than long, base truncate, a little wider than apex, produced a little backwards at middle, sides rounded from apex to base, reflexed, narrowly in front, more widely behind, the hind angles right and sharp, projecting on each side as a minute tooth; median line fairly deep, basal sulcus deep, with three pores at middle (not always well defined), the foveæ moderately deep, diverging in front. Elytra suboval, convex, nearly three-fifths wider than prothorax, rather less than a half longer than wide, shoulders well marked, sides nearly parallel but widest a little behind middle, striæ entire, indistinctly punctate, 1 to 4 moderately impressed, 5 and 6 rather faint, 7 just visible, recurrent striole straight, fairly long and deep, ending opposite stria 6, intervals moderately convex on disk, dorsal pores adjoining stria 3, at about a fifth and just behind a half respectively. Microsculpture of the elytra formed by extremely fine, barely visible, transverse lines ($\times 75$); on the prothorax very wide meshes are just visible; on the head the meshes are isodiametric but very faint.

The species is a very variable one both in form and colour. The proportions of the prothorax and elytra given above are those of the type.

Length, 4-5 mm

Distribution PUNJAB: Simla Hills, Kotgarh (M. Cameron). UNITED PROVINCES Dehra Dun, Anarwala, Happy Valley, and Nagal, Chakrata division, Konain, 8000 feet (S. N. Chatterjee), Bodyar (C. F. C. Beeson), Korawa Khud (M. Cameron), Sijla Gad, Kanasar, and Khedar Khud (S. N. Chatterjee), Mussooree, Dhobi Ghat and Ringal Gad (M. Cameron), Siwalik Hills, Mohan Rau (M. Cameron), Kumaon, West Almora, and Naini-Tal (H. G. Champion), Tehri State (M. Bose) BENGAL. Darjeeling (J. Harmand), Gopaldhara (H. Stevens), Kurseong SIKKIM Rangli (R. W. G. Hingston).

Type in Mr René Oberthur's collection

279 a *Trechus indicus* var *championi*, Jeann

Trechus championi Jeannel, Ann Mag Nat Hist (9) v, 1920, p 109. id., Ann Mag Nat Hist (9) xii, 1923, pp 416 and 420, f 12, Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 20.

Trechus indicus subsp *championi* Jeannel, Mon (u) pp 157 and 158, ff 528-532

Black and more evidently iridescent. There appears to be nothing but the colour to distinguish the variety from the type-form, and both occur from end to end of the Himalayas.

Distribution KASHMIR Zolab Valley, Afan (C. F. C Beeson), Baltal and Sonemarg (G Babault) PUNJAB: Simla Hills, Kotgarh (S N Chatterjee) and Gahan (M Cameron), Murree Hills, Camp Thobba (H Roberts), Dharm-sala and Mandi, Jhatingri (H G Champion), Spiti, Pulga, and Lahul, Cimur (G Babault) UNITED PROVINCES Kumaon, West and Central Almora, Upper Gumti Valley, Sunderdhunga



Fig 9—(a) *Trechus indicus* var. *championi* Jeannel, (b) mentum, (c) underside of ligula, (d) and (e) aedeagi

Valley, and Swal River basin (all H G Champion), Chakrata, Deoban, 9000 feet, and Jaunsar (H G Champion), Naini-Tal and Ranikhet (H G Champion) BENGAL Darjeeling (H Stevens), Gopaldhara (H Stevens)

Type in the British Museum

279 b. *Trechus indicus* var. *macroderus*, Jeann [Plate I, fig. 8]

Trechus indicus subsp. *macroderus* Jeannel, Ann Mag Nat. Hist (10) 1, 1928, p 290, id, Mon (ii) p 790

Colour dark red, shiny, palpi, antennæ, and legs ferruginous

Head like that of *indicus*, the eyes rather more prominent and shorter, about three times as long as genæ, which are convex and continue the outline of the eye, antennæ shorter and thicker, not extending far beyond the base of the elytra

Prothorax large, about a third wider than head and as much wider than long, base truncate, hardly wider than apex, sides rounded in front, not sinuate behind, marginal channel very narrow, hind angles obtuse; median line fairly deep, basal sulcus deep, the foveæ shallower than in *indicus*. *Elytra* convex, two-fifths wider than prothorax, a third longer than wide; striae 1 to 3 moderately deep and indistinctly crenulate, 4 very slight, the rest obsolete, first dorsal pore not more than a fifth from base. Traces only of microsculpture present.

Dr Jeannel calls this a brachypterous race of *indicus*, but it differs in so many characters from the type-form and from var. *championi* that it may yet prove to be a distinct species. At present it is known only by a unique ♀ specimen.

Length, 4 mm.

Distribution KASHMIR. Kishtwar

Type in the British Museum. A single ♀ example.

280 Trechus macrops, Jeann.

Trechus macrops Jeannel, Mon (u) pp 157 and 160, ff 533-536; id., Ann Mag Nat. Hist (10) 1, 1928, p 289.

"Winged Near *T. indicus*, but larger and wider, the eyes larger and more prominent, the prothorax shorter and

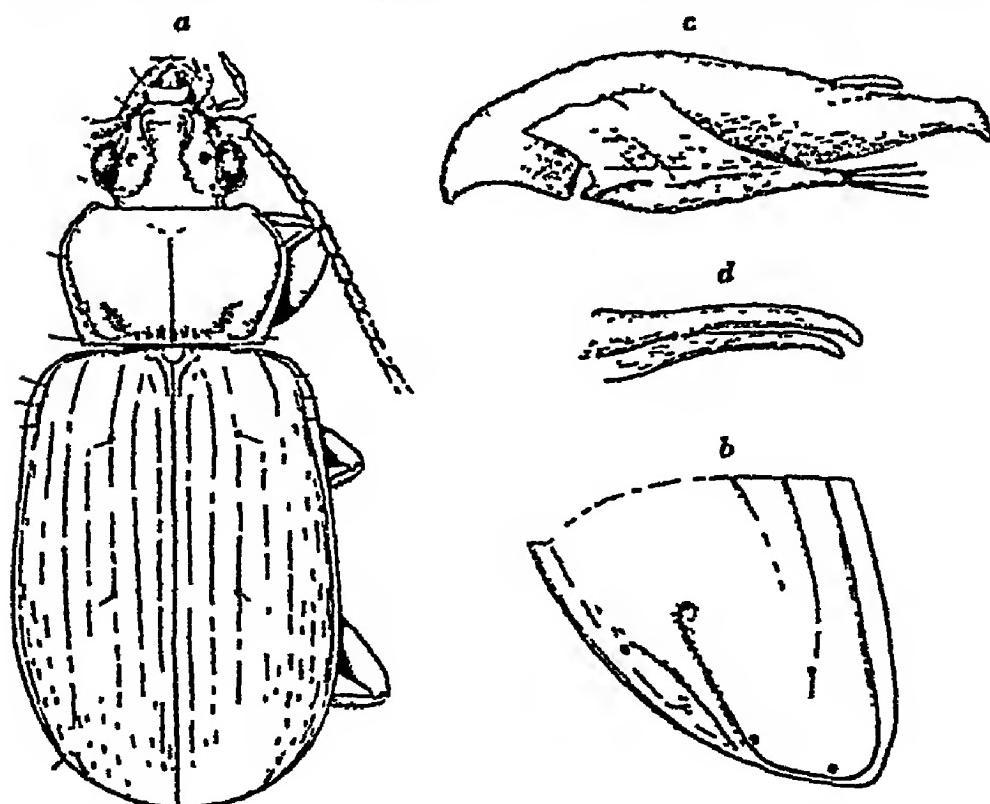


Fig. 10—(a) *Trechus macrops* Jeannel; (b) apex of left elytron; (c) and (d) aedeagus

more transverse, its base much wider than apex, the sides more rounded arcuate up to the hind angles, not sinuate behind. Elytra large and long, the striation finer than in *T. indicus* the outer striae more effaced."

The type-specimen, labelled "Yunnan," was unique when the species was first described but Dr Jeannel has since seen a second example taken by Mr. Babault "in Kashmir at Sonemarg in the mountains to the east of Lake Wular." He is now of opinion that the type was incorrectly labelled and that the species is an Indian one

The illustration (fig 10, p 67) shows the ♂ genitalia, which may be compared with those shown under *T. indicus*. I have not seen the type, but Dr. Jeannel kindly sent me the Sonemarg specimen for examination. I was unable to discover any appreciable external differences between it and examples of *T. indicus*.

Length, 5.2 mm

Distribution KASHMIR: Sonemarg (G. Babault). YUNNAN (?). Type in Dr R Jeannel's collection.

281. *Trechus imaiicus*, Jeann.

Trechus imaiicus Jeannel, Ann Mag. Nat Hist (9) xu, 1923, pp 416 and 421, f. 13; id., Mon. (ii) pp 157 and 161, ff. 537-539; id., Ann. Mag. Nat Hist. (10) i, 1928, p. 284; Andrewes, Trans. Ent. Soc. Lond. 1930, p 3.

Colour piceous; buccal organs flavous, joints 1 and 2 of antennæ (rest fuscous), epipleura margins, apex, and suture of elytra, and legs more or less ferruginous.

Apterous Head small; frontal furrows deep smooth, and regularly curved; eyes rather flat; genæ short but evident; antennæ rather stout reaching basal fourth of elytra, joint 2 a little shorter than 3. Prothorax convex, subcordate, a half wider than head a third wider than long, widest at apical third, base slightly wider than apex, its sides a little oblique close to the angles, sides reflexed, regularly rounded from apex to base, the hind angles formed on each side by a small, obtuse, but fairly sharp tooth; median line and basal sulcus both moderately deep, the latter with one or two ill-defined pores, basal foveæ small but deep, separated from the angles on each side by a slight raised area. Elytra convex, oval, quite a half wider than prothorax, not quite a third longer than wide, shoulders much rounded but visible: striae all visible and vaguely crenulate, 1 to 3 fairly deep and entire, the others slight, irregular behind, recurrent striae fairly deep and somewhat curved; inner intervals a little convex, 2 widening before apex, dorsal pores at a fourth and a half

respectively. Microsculpture of the elytra barely visible, though vague transverse lines are visible here and there, on the prothorax the transverse lines are more visible; on the head there are distinct meshes, a little wider than long.

Length, 4 mm

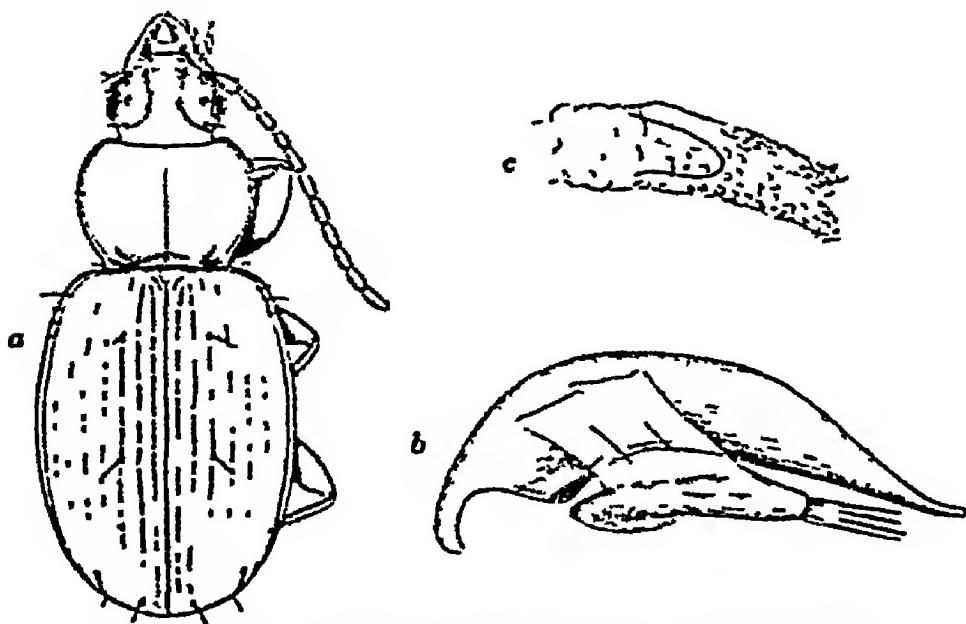


Fig. 11.—(a) *Trechus imicus* Jeannel, (b) aedeagus; (c) inner sac.

Distribution SIKKIM Tonglu, 10,000 feet, on the Nepalese frontier (*H. Stevens*); Karponang (*R. W. G. Hingston*). BENGAL Ghum district (*M. Cameron*)

Type in my collection.

282 *Trechus hingstoni*, Jeann.

Trechus hingstoni Jeannel, Ann Mag Nat Hist. (10) 1, 1928, p. 288, f 2; id., Mon (vi) p. 790; Andrewes, Trans Ent Soc Lond 1930, p. 4

Colour piceous, shiny, basal joints of the antennæ (rest fuscous), palpi, base of the prothorax, base, apex, and suture of the elytra, sterna, and legs more or less ferruginous.

Apterous Head rather small, with deep, smooth, regularly curved, frontal furrows, eyes rather flat, longer than the genæ, which are quite evident and curve round fairly sharply to the neck, antennæ rather short but stout, hardly reaching basal fifth of the elytra, joints 1 and 2 equal. *Prothorax* convex, subquadrate, rather more than a third wider than head and in the same proportion wider than long, widest a little before middle, base truncate, as wide as apex, sides reflexed, well rounded in front, sinuate close to base, hind

angles right and sharp, median line fairly deep, basal sulcus lightly impressed, basal foveæ large and deep, almost adjoining the angles *Elytra* convex, oval, rather more than a half wider than prothorax, a fourth longer than wide, shoulders visible though rounded, sides strongly rounded, striæ very vaguely crenulate, 1 to 3 deep and entire, 4 and 5 traceable, 6 and 7 wanting, recurrent striole deep and wide, ending opposite stria 5, inner intervals moderately convex, 2 very wide near apex, front dorsal pore at a third or a fourth from base, hind one just behind middle Microsculpture very slight, but isodiametric meshes are visible on the head and some vague transverse lines on the elytra

Length, 3 5-4 mm

Distribution SIKKIM: Gnatong (R. W. G. Hingston).

Type in the British Museum

283. *Trechus beesoni*, Jeann. [Plate I, fig. 7.]

Trechus beesoni Jeannel, Mon. (iv) p. 83

Colour ferruginous, shiny; apical joints of antennæ fuscous, apical half to two-thirds of elytra black

Apterous Head small; frontal furrows deep, angulate at middle, diverging in front and behind, eyes flat, longer than genæ, antennæ submoniliform, reaching basal third of elytra, joints 2 and 3 equal Prothorax subquadrate, convex, two-fifths wider than head and as much wider than long, widest at apical third, base produced at middle, wider than apex, sides narrowly reflexed, rounded from apex to base, the hind angles formed on each side by a slight obtuse tooth, median line and basal sulcus both moderately impressed, basal foveæ small and rounded, separated on each side from the margin by a slight raised area Elytra moderately convex, subovate, not quite a half wider than prothorax, two-fifths longer than wide, shoulders quite apparent though rounded, striæ vaguely crenulate, the three inner ones fairly deep, 4 shallower, the rest slight but visible, recurrent striole moderately deep, curving slightly inwards at extremity, inner intervals moderately convex, dorsal pores at a fifth and just behind a half respectively Microsculpture of the elytra formed by very fine transverse lines, traces only on the head and prothorax

Length, 4 mm

Distribution KASHMIR. Gulmarg, 8500 feet (C. F. C Beeson and M. Cameron)

Type in the British Museum.

284 *Trechus cameroni*, Jeann.

Trechus cameroni Jeannel, Ann Mag Nat. Hist. (9) xii, 1923, pp. 416 and 422, f. 14; id., Mon. (u) pp. 157 and 162, fig. 540-543, id., Ann Mag Nat. Hist. (10) i, 1928, p. 291

Colour black or piceous; palpi, antennæ, lateral margins of prothorax, epipleura, margins, and suture of elytra, and legs more or less dark ferruginous

Apterous Head with deep curved furrows, diverging in front and behind and hardly angulate at middle; eyes small, not prominent; genæ inconspicuous; antennæ submoniliform, barely reaching basal fourth of elytra, joints 2 and 3 equal. Prothorax subquadrate, a little more than a third wider than

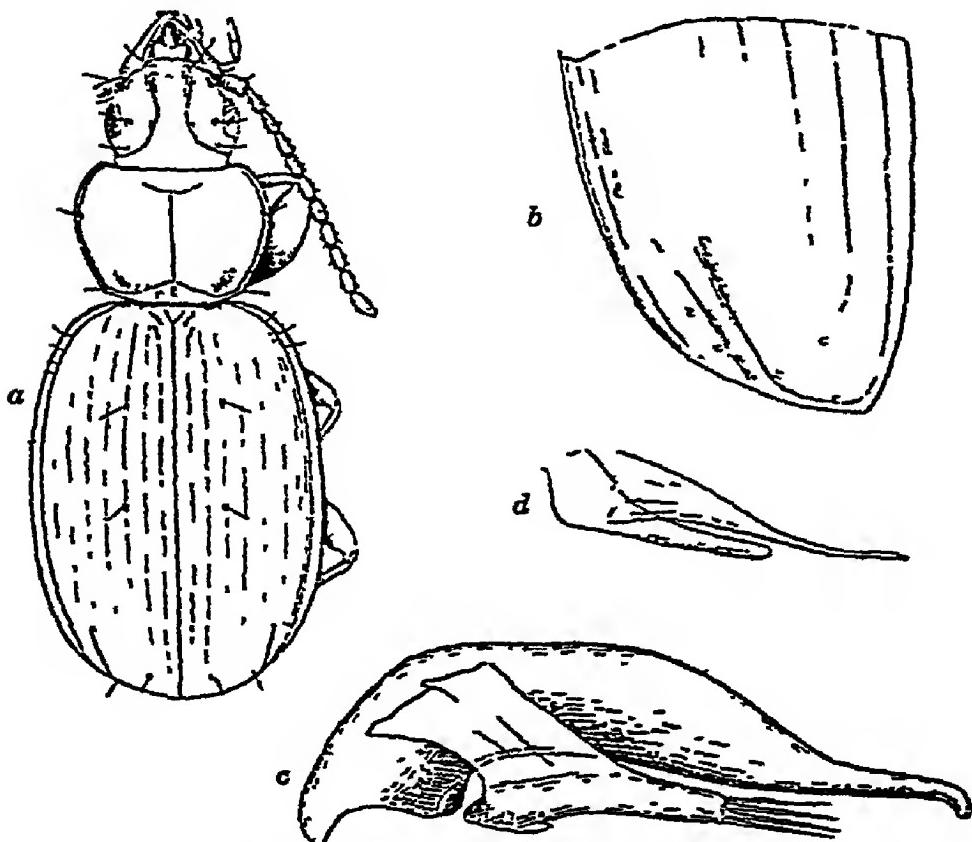


Fig. 12—(a) *Trechus cameroni* Jeannel; (b) apex of left elytron; (c) and (d) aedeagus.

head and in the same proportion wider than long, widest at apical third, base slightly wider than apex, a little produced at middle, its sides rather oblique, sides rounded and reflexed, hind angles obtuse and reflexed, but not usually much rounded, median line moderately deep, basal sulcus deep, basal foveæ small but deep. Elytra convex, oval, a half wider than prothorax, a third longer than wide, shoulders apparent though rounded, sides strongly rounded; striae

very vaguely crenulate, 1 and 2 fairly deep on disk, 2 very faint near apex, the other striæ very lightly impressed, the outer ones barely visible, recurrent striole straight and fairly deep, curving slightly inwards in front, inner intervals slightly convex, dorsal pores at a fourth and just behind a half respectively. Microsculpture of the elytra formed by very wide meshes, hardly any visible on the head and prothorax

Length, 3 3-3 6 mm

Distribution. PUNJAB. Simla Hills, Kotgarh, 7000 feet (*S N. Chatterjee*), Narkanda, 9200 feet (*M Cameron*), Tharoch, Talratach, 10,000 feet (*C F C Beeson*), Jalori Pass, Seraj, 10,800 feet (*H G Champion*), Lahul, Rotang Pass, 12,000 feet (*C Rost*).

Type in the British Museum.

284 a *Trechus cameroni* var *bistriatus*, Jeann

Trechus cameroni Jeannel, subsp *bistriatus* Jeannel, Ann Mag. Nat. Hist (10) i, 1928, p 291, id, Mon (iii) p 791

Coloured as in the type-form, the head and prothorax similar. The elytra are a little longer, but the chief difference is in their striation, striæ 1 and 2 are very lightly impressed, 3 and 4 are just visible under a high magnification, the other striæ wanting

Distribution PUNJAB Kangra, Lake Kareri (*S L Hora*)

Type in Dr Jeannel's collection

285 *Trechus thibetanus*, Jeann

Trechus thibetanus Jeannel, Ann Mag Nat Hist (10) i, 1928, p 284, f 1; id, Mon (iii) p 791, Andrewes, Trans Ent. Soc. Lond. 1930, p 4

Colour black or piceous, antennæ at base (sometimes altogether), prothorax (sometimes margins only), base, apical border, and suture of elytra, sterna, base of venter, and legs more or less dark ferruginous

Apterous *Head* similar to that of *cameroni*, but the frontal furrows are much shallower and subangulate at middle, the eyes flat, the antennæ a little longer and not at all moniliform. *Prothorax* also similar, but the base is of the same width as the apex, the sides are less rounded, and, although the basal sulcus is equally deep, the foveæ are obsolete. *Elytra* very similar to those of *cameroni*, but relatively rather longer and less convex, the striæ are variable, sometimes the inner ones are lightly impressed and the outer ones obsolete, sometimes the four inner striæ are moderately impressed and all the striæ are visible, recurrent striole fairly deep, curving slightly inwards and ending opposite stria 5. The meshes

of the microsculpture are much less wide, on average only two to three times wider than long. The outer sulcus on the protibiae is obsolete.

The species is extremely variable both in colour and form, but the characters given above appear to distinguish it sufficiently from *cameroni*.

Length, 2 8-4 mm.

Distribution SIKKIM. Tangu TIBET: Chumbi Valley, Gautsa, Tuna, Pangle, Pang La, Tashidzom, Lamna La, Phuse La, and Tasam (all R W G Hingston).

Type in the British Museum

A species of high altitudes, examples having been found by the Third Mount Everest Expedition up to a height of 17,000 feet, probably the highest point at which coleoptera have ever been met with.

286. *Trechus pumilio*, Jeann

Trechus pumilio Jeannel, Ann. Mag. Nat. Hist. (9) xii, 1923, pp 416 and 424, f 15; id., Mon. (u) pp 157 and 163, f 544.

Colour piceous, margin of the elytra reddish, palpi, antennæ, and legs ferruginous.

Apterous Head small, frontal furrows deep, not angulate on the vertex, a rounded impression on each side on their

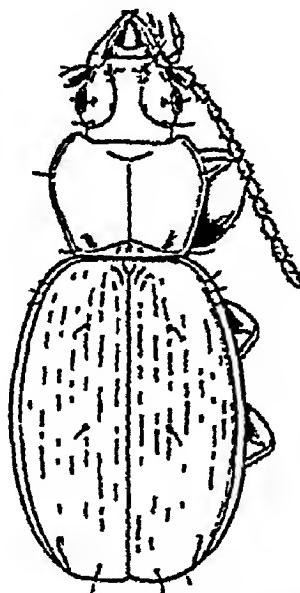


Fig. 13.—*Trechus pumilio* Jeannel

outer margin and just behind the clypeal suture; eyes flat, rather longer than genæ, antennæ short, moniliform, joint 2 slightly shorter than 3. Prothorax subquadrate, about a third

wider than head, a little more than a third wider than long, widest at a third from apex, base as wide as apex, sides strongly rounded and sinuate before base, the marginal channel wide, especially behind, the hind angles obtuse but moderately sharp, median line fairly deep, transverse sulcus short, with a few vague pores, the foveæ small, smooth, and shallow. *Elytra* oval, moderately convex, a half wider than prothorax, a third longer than wide, the sides well rounded, the shoulders effaced, all the striæ visible and vaguely crenulate, the three inner ones lightly impressed, the rest faint, recurrent striæ faint, terminating before quite reaching stria 5, dorsal pores at a fifth and just behind middle respectively. Microsculpture of the head formed by isodiametric meshes, on the prothorax the meshes are vague and transverse, on the elytra even vaguer and irregular. *Protibiae* with only a slight external sulcus.

Length, 28 mm

Distribution UNITED PROVINCES : Kumaon, Pindar Valley, 8000–11,000 feet (*H G Champion*).

Type in the British Museum

Only a solitary ♀ specimen is at present known

Genus AGONOTRECHUS.

Agonotrechus Jeannel, Ann Mag Nat Hist. (9) xii, 1923, p. 428
id., Mon des Trechines (iii), Abeille, xxxv, 1928, p. 85

TYPE, *Trechus burmanicus* Bates (Burma.)

Form oval and convex, surface glabrous, shiny, and somewhat iridescent, colour black, piceous, or brown

Head with large and generally rather flat eyes, narrowly separated from the buccal fissure, genæ inconspicuous, clypeus quadrisetose, labrum sexsetose, generally bisinuate, sometimes emarginate, mandibles stout, bidentate, ligula 8-setose, free at apex, paraglossæ fairly wide, extending beyond the ligula, mentum completely fused with the submentum, the former with a short simple tooth and a pair of setæ, one on each side of its base, submentum quadrisetose, maxillæ with the outer lobe two-jointed, the inner one with comparatively few bristles, palpi slender, the apical slightly longer than the penultimate in the maxillaries, the penultimate longer than the apical joint in the labials, inwardly bisetose, antennæ slender, reaching basal third of elytra, joint 2 shorter than the other joints

Prothorax subcordate or quadrate, sides reflexed, with two setæ, placed at about basal third and in front of the hind angle

Elytra wide, oval, convex, the border rounding the shoulder and reaching stria 5; stria moderately deep, punctate, entire, the recurrent apical striae joining 5, after its moderately convex, 3 with a single dorsal pore near base, adjoining stria 3, apical pore at the point where striae 2, 3, and 4 meet or nearly meet. Microsculpture formed by vague, barely visible transverse lines (fig. 75).

Lg. fairly stout, the pronotum externally granular and slightly pubescent at apex, pretarsus with two dilated joints in the 5.

Range India and Burma

Key to the Species

- | | | |
|--|--|-------------------------------|
| 1 (4) Prothorax with the sides rather wide, reflexed, slightly exserted before the head angles, which are sharp & right, a little obtuse | | |
| 2 (3) Eyes rather flat, labrum truncate in front. Length 5-6 mm. | | p. 75
Liberianus, Bates. |
| 3 (2) Eyes moderately prominent, labrum emarginate in front. Length 5-6 mm. | | in sp. n., p. 76 |
| 4 (1) Prothorax with the sides rather wide, reflexed, evenly rounded, just before the head angles which are obtuse and not exserted before head, labrum triangular in form. Length 4-5 mm. | | p. 77
antennalis, Jeannel. |

257 *Agonotrechus bimanicus*, Bates

Trechus bimanicus Bates*, Ann. Mag. (1) Gen. xxii, 1892,
p. 277

Agonotrechus bimanicus Jeannel, Ann. Mag. Nat. Hist. (9) xv.
1922, p. 429 + pl. VI, fig. 1, 2, 3, 4, 5, 6, 1319-21

Colour piceous or brown, the upper surface slightly iridescent, sides of the prothorax and clypeus reddish brown, antennae ferruginous, legs and palps flavous.

Head with deep sulci, terminating on each side behind in an oblique shallow line which does not extend far behind the eyes, front margin of labrum slightly brimuate, eyes large and rather flat; genae small and inconspicuous. Prothorax subcordate, moderately convex, a third wider than head, a fourth wider than long, base truncate, a third wider than apex, sides gently rounded, strongly and widely reflexed, barely sinuate before base, hind angles strongly reflexed, moderately sharp but a little obtuse, median line moderately deep, entire, transverse impressions slight, basal suture wide and deep, surface impunctate. Elytra convex, oval, two-thirds wider than prothorax, a little less than a half longer than wide, shoulders rounded but evident, striae moderately deep, fine, and rather inconspicuously punctate, the outer ones

shallower behind, 1 joining 2 and 3 joining 4 at base, 2 to 4 meeting behind at the apical pore, intervals moderately convex

Length, 5-5.5 mm

Distribution BURMA Karen Mountains (*L. Fea*)

Type in the Genoa Civic Museum

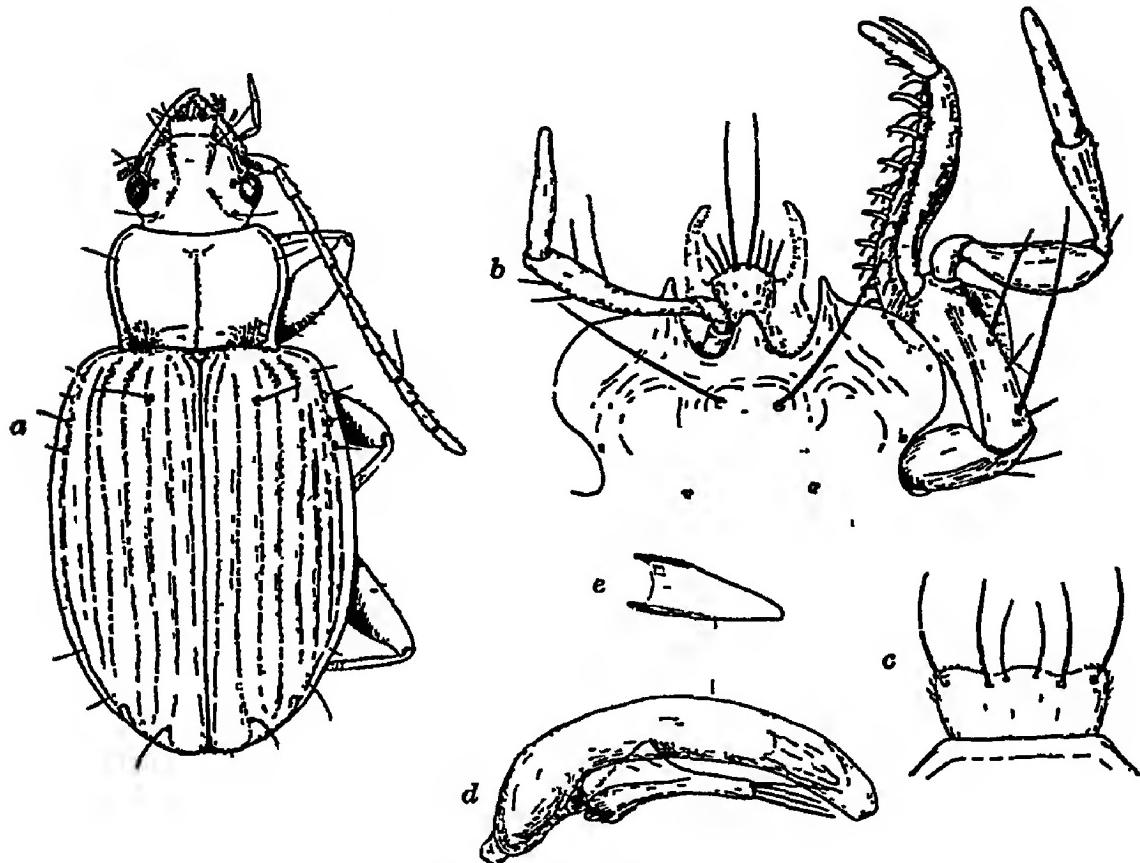


Fig. 14.—(a) *Agonotrechus birmanicus* Bates, (b) labium, (c) labrum, (d) and (e) aedeagus

I have seen the type and a co-type, both in the Genoa Museum, and I have a co-type in my own collection. The measurements given above are those of the type, in my example all the parts of the insect are wider, so that the proportions are a little different.

288 *Agonotrechus iris*, sp nov [Plate I, fig 5]

Colour of the underside brown, the upper surface piceous black and a little more iridescent than in *birmanicus*, palpi and joints 1 to 3 of the antennæ ferruginous, lateral margins of the prothorax (vaguely), lateral margins and suture of the elytra, rest of antennæ, and legs dark ferruginous

Head differing from *birmanicus* in the sulci which are

similar in front but form a shallow groove instead of a fine line where they curve round on each side behind; the front of the labrum is emarginate instead of bisinuate, the eyes are moderately prominent, joint 3 of the antennæ, which in *birmanicus* is about a third longer than 2, is here quite a half longer. *Prothorax* nearly similar in form, but two-fifths wider than head and a third wider than long, base about a third wider than apex, the impressions are all a little deeper but of the same form. *Elytra* a little wider, three-fifths wider than prothorax, but a little less than a half longer than wide, the striæ hardly differing in depth but a little more conspicuously punctate.

Length, 5.8 mm.

Distribution UNITED PROVINCES: Dehra Dun, Dobhalwala.
Type in my collection

289 *Agonotrechus andrewesi*, Jeann

Trechus indicus (?) Andrewes (not Putzeys), Trans Ent Soc Lond. 1922, p 247, Jeannel, Ann. Mag Nat Hist (9) xii, 1923, p 417.

Agonotrechus andrewesi Jeannel *, Ann Mag Nat Hist (9) xii, 1923, p 430, f. 17, id, Mon (m) p 89, ff 1324-7.

Colour beneath piceous, upper surface black, shiny,

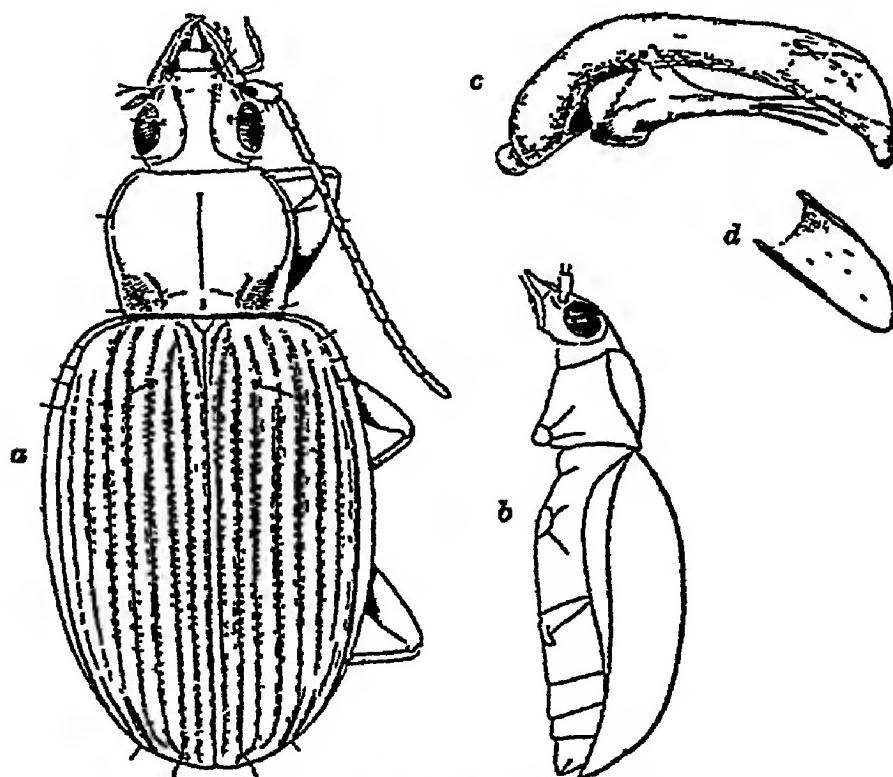


Fig. 15.—(a) *Agonotrechus andrewesi* Jeannel, (b) lateral aspect, (c) and (d) aedeagus

slightly iridescent, elytral margins (rather faintly), palpi, antennæ, and legs ferruginous

Head smaller than in *birmanicus*; the continuation of the sulci on each side behind the eyes slightly deeper, the eyes almost as flat, the surface adjoining them with some vague oblique striation, the antennæ with more slender joints, 1 hardly longer than 2. *Prothorax* quadrate, a little more than two-fifths wider than head, a third wider than long, base much wider than apex, sides less widely reflexed than in *birmanicus*, gently and evenly rounded, without sinuation before base, hind angles obtuse and a little rounded, the impressions on the surface are all very similar, but the basal foveæ are somewhat deeper. *Elytra* relatively shorter and wider than in *birmanicus*, quite two-thirds wider than prothorax, about two-fifths longer than wide, the striae a little deeper and the intervals more convex.

Length, 4.8 mm

Distribution BENGAL · Kurseong and Darjeeling

Type in my collection

Genus STEVENSIUS.

Stevensiuss Jeannel, Ann Mag Nat Hist (9) xii, 1923, p 432, id.,
Mon des Trechinæ (iii), Abeille, xxxv, 1928, p 90

TYPE, *Stevensiuss lampros* Jeannel (Sikkim)

Apterous Form wide, head very large, genæ much developed, prothorax strongly contracted behind, surface smooth and shiny

Head large, with small rather flat eyes, widely separated from the buccal fissure, genæ strongly dilated, much longer than eyes, and extending as far laterally, clypeus quadrisetose, emarginate in front, the central part continuing the convexity of the front, the margins flat, labrum sexsetose, emarginate, mandibles stout, long, bidentate, slightly hooked, mentum fused with the submentum, the former with a short bifid tooth and a seta on each side distant from the tooth, the latter with a pore on each side behind the buccal fissure, ligula small, porrect, sexsetose, palpi short, slight, pointed at apex, penultimate joint slender at base, dilated at apex, equal to the apical joint in the maxillaries, longer in the labials, with its inner margin bisetose, antennæ submoniliform

Prothorax cordate, convex, sides narrowly reflexed in front, more widely behind, lateral setæ at apical third and on the hind angle

Elytra wide, subovate, convex, basal border rather long, oblique, reaching a point approximately opposite the site of stria 3, striae vestigial, scutellary striae short but distinct,

originating on each side in an umbilicate pore surface smooth and shiny

Legs short, the protibiae externally grooved and slightly pubescent at apex, protarsi with two dilated joints in the ♂.

Range Sikkim

290 *Stevensius lampros*, Jeann

Stevensius lampros Jeannel *, Ann Mag Nat Hist (9) xii, 1923, p. 433, f 18; id., Mon (iii), p 92, ff 1328-31

Colour black, shiny, head and prothorax sometimes reddish; palpi, antennae, legs, and margins of the elytra dull red

Form rather ant-like, the base of both prothorax and elytra strongly contracted to the peduncle, so that the insect appears constricted at middle

Head large, the neck very thick, the sulci deep, nearly parallel in front and continuing on each side in a regular and fairly

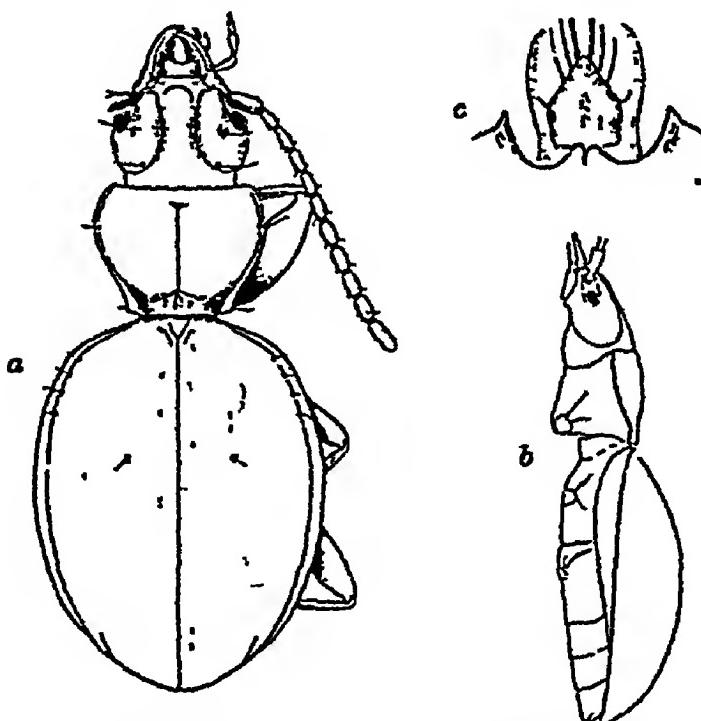


Fig 16 —(a) *Stevensius lampros* Jeannel, (b) lateral aspect, (c) labium

deep groove behind the genae, eyes small and flat, placed very near the insertion of the antennae, which are stout but only reach the basal fifth of the elytra, joints 1, 3, and 11 a little longer than the rest, joints 7 to 11 oval, about a half longer than wide. Prothorax not quite a third wider than head, about two-thirds wider than long, base truncate, evidently narrower than apex, front angles rounded, declivous, adjoining neck, hind angles reflexed, and forming on each side, without

projecting laterally, a sharp rectangular tooth; median line fairly deep behind, base depressed, basal foveæ fairly large and deep, diverging strongly in front. *Elytra* a half wider than prothorax, a third longer than wide, the humeral angles just indicated, traces of the inner striæ, though vague, are quite appreciable, surface smooth and polished, with a single large dorsal pore on stria 3 at two-fifths from base, recurrent striole short, curved, and very distinct, widening out in front and ending on the middle of the elytron,

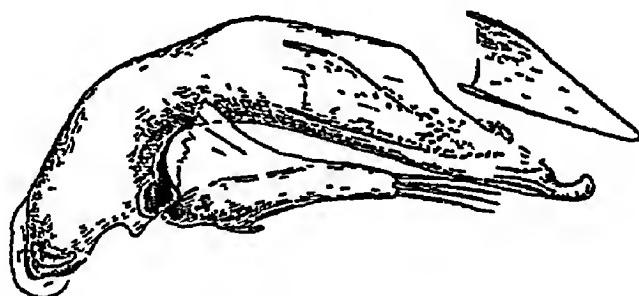


Fig. 17.—*Stevensiuss lampros* Jeannel (aedeagus)

a pore just within it close to apex. Microsculpture of the prothorax and elytra formed by transverse lines, which are only just visible, on the head the meshes are isodiametric but distinct only on the neck.

Length, 4·75 mm

Distribution SIKKIM. Tonglu, on the Nepal frontier, at 10,000 feet (*H. Stevens*).

Type in my collection

Group XVII BEMBIDIINI.

Though the genera are few the species are very numerous, so that this is one of the largest groups of the HARPALINÆ, the distribution is world-wide, and five of the genera are found in the Indian region. The head has two supraorbital setæ on each side, the frontal furrows are sometimes moderately but never very deep, and they do not curve round behind the eyes as in the TRECHINI, the mandibles have a seta in the scrobe, the ligula has two setæ at apex, placed close together, the paraglossæ hardly extend beyond the ligula, the apical joint of the palpi is exceedingly small and subulate, the penultimate joint dilated and pubescent, the antennæ with the first two joints glabrous, the sides of the prothorax are nearly always bisetose and the elytra are with or without a recurrent striole. The form of the apical joint of the palpi is not unlike that of *Perileptus* (TRECHINI), but it is smaller, shorter, and generally more definitely subulate.

Key to the Genera.

- 1 (6) Outer margin of the prothorax straight from base to apex.
- 2 (3) Elytra covered with short dense pubescence, often forming a pattern, the puncturation quite irregular; traces only of striation present
- 3 (2) Elytra glabrous, striato, or at least with striae 2 nearly always present, a short scutellary striole present
- 4 (5) Mandibles short and fairly stout, maxilla normal and not longer than the mandibles, antepenultimate joint of the maxillary palpi not unusually developed
- 5 (4) Mandibles and maxilla both very long and slender, the maxilla longer than the mandibles, antepenultimate joint of the maxillary palpi very long and slender, a third longer than joint 1 of the antennae
- 6 (1) Outer margin of the prothorax obliquely truncate and sometimes slightly emarginate at apex, no scutellary striole
- 7 (8) Upper surface glabrous, a recurved striole nearly always present on each side at the apex of the elytra
- 8 (7) Upper surface shortly pubescent, with at most a rudimentary recurved striole at the apex of the elytra

ASAPHIDION, p 81

BEMBIDIOV, p 92

[p. 204.
TIRUKA. gen nov.,

TACHYS, p 206

LYMNASTIS, p 302

Genus ASAPHIDION.

Asaphidion Des Gozis, Recherche de l'espèce typique de quelques anciens genres, rectifications synonymiques, et notes diverses, 1886, p 6. Bedel, Catalogue raisonné des Coléoptères du Nord de l'Afrique, 1896, p 55. Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 18, id, Ent Month Mag 1925, p 49; id, Ent Month Mag 1935 p. 200
Tachypus Dejean (not Weber), Spec Gen v, 1831, p 35; Castelnau, Hist Nat Col 1, 1840, p 152.

TYPE, *Cicindela flavipes* L (Palaearctic region)

Colour mainly aeneous Body convex, punctulate, and with a short recumbent pubescence, often mottled on the elytra, and sometimes concealing the sculpture

Head wide, often wider than prothorax, flat or depressed between the eyes, which are very large and prominent, a little removed from buccal fissure, with two supraorbital setæ, surface rugose-punctate, sometimes striate, frontal furrows obsolete; labrum truncate or arcuate, sexsetose, clypeus transverse, bisetose, mandibles short and stout, mentum emarginate and with a rounded or subtruncate tooth in the emargination, lugula a little dilated at apex, where two setæ

are present, some accessory setæ being present on each side, paraglossæ narrow, membranous, free at apex, curving inwards in front, and extending a little beyond ligula, maxillæ as in *Bembidion*, palpi with the apical joint subulate and very small, penultimate joint dilated, setulose in the maxillaries, but with only a few setæ in the labials, antennæ fully pubescent from joint 5, but setæ are present on the basal joints and increase in number from the base onwards, joint 2 either equal to or shorter than 3

Prothorax convex, cordate, strongly contracted behind, base produced backwards at middle, sides with a single seta at apical third, very rarely with a second seta on the hind angle, normal impressions very slight

Elytra moderately convex, subovate, the surface generally uneven, but with only traces of striation, punctate, sometimes asperate, occasionally with one or two small smooth areas along sides, the pubescence varying in density but sometimes forming a pattern border usually more or less sinuate on each side near apex, two generally deep and very conspicuous dorsal pores, a third smaller pore near apex

Underside smooth, sterna sometimes punctate and slightly pubescent (*indicum*), metasternal process unbordered between the mesocoxæ but generally with a depression behind it, first ventral segment longitudinally striate along base, ♂ with one seta, ♀ with two setæ on each side of last ventral segment, protarsi ♂ with joint 1 strongly, joint 2 feebly dilated, 1 nearly as long as 2-4 taken together.

A microsculpture of the upper surface is always present, sometimes rough, but often clearly reticulate, not infrequently masked by the close puncturation

Range Palæarctic region, including the Himalayas and Yunnan, a single species being found in Alaska

The species are not numerous and frequent the banks of streams and lakes, being met with sometimes at elevations of 8000 or 9000 feet, a specimen of *indicum* was taken in "tree-moss" Of the life-history nothing seems to be known

Key to the Species.

- 1 (20) Prothorax without any seta on the hind angles
- 2 (5) Prothorax wider than head, colour dark bronze with traces of blue
Large species of over 5 mm in length
- 3 (4) Femora mainly dark, reddish at base
- 4 (3) Femora mainly pale ferruginous
- 5 (2) Prothorax narrower than head Small species of at most and usually under 5 mm in length.

[p 84]
championi, Andr,
championi var *luteipes*,
 [var nov, p 85]

- 6 (15) Elytra very finely punctate, covered by a close grey pubescence, forming a pattern and largely concealing the puncturation over the whole surface
- 7 (12) Prothorax rounded at sides, joints 1 to 4 of antennæ (mainly) and femora dark
- 8 (11) Apical pore on the elytra small and inconspicuous
- 9 (10) Colour æneous, the grey pubescence on the elytra forming vague rounded patches
- 10 (9) Colour bronze, the grey pubescence on the elytra arranged more or less in three transverse bands
- 11 (8) Apical pore on the elytra large and conspicuous, the pubescence forming a highly variegated pattern
- 12 (7) Prothorax angulate or subangulate at sides, joints 1 to 4 of antennæ and femora pale
- 13 (14) Elytra dark grass-green, covered by a pale grey pubescence, with small dark patches here and there, apical pore distinct Length 4·5 mm
- 14 (13) Elytra mainly black, mottled with yellowish green along suture and on apical half, the grey pubescence forming only vague patches, apical pore indistinct Length 5 mm
- 15 (6) Elytra moderately punctate, the puncturation visible over a large part of the surface, or, if more finely punctate, then visible at least at sides
- 16 (19) Antennæ short, hardly dilated at apex; elytra nearly uniform in colour, the puncturation visible over a large part of the surface.
- 17 (18) Head not longitudinally striate; elytra three-fourths longer than wide, the surface nearly even, colour æneous Length 4 mm
- 18 (17) Head longitudinally striate, elytra a half longer than wide, surface somewhat uneven, æneous, the head and prothorax dark green Length 4·4 mm
- 19 (16) Antennæ long, dilated at apex, elytra each with a broad purple stripe down the middle, the fine puncturation clearly visible at sides
- 20 (1) Prothorax with a seta on the hind angles, subangulate at sides, as wide as head, elytra vaguely striate, colour mainly æneous
- obscurum, Andr., p. 85.
[p 85
cuprascens, Andr.,
griseum, Andr., p. 86
viride, Andr., p. 87
[p 88
formosum, sp. nov.,
indicum, Chaud., p. 88
[p 89.
substriatum, Andr.,
ornatum, Andr., p. 90
triste, sp. nov., p. 91.

291 *Asaphidion championi*, Andr [Plate IV, fig 8.]

Asaphidion championi Andrewes, in Mission dans les Provinces Centrales et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 84, t 2, f 2, id., Ent Month. Mag 1925, p 52, t 1, f 4, Netolitzky, Ark Zool 27 A, 18, Col 4, Carab 1934, p 22

Colour of the upper surface dark bronze, sometimes with traces of blue, covered with a short recumbent grey pubescence, mottled on the elytra, underside black, with green and blue reflections, joints 1 to 4 of antennæ at base, middle of tibiæ, and base of femora reddish, the legs (where dark) with metallic reflections, tibiæ and tarsi often blue

Head finely strigose-punctate, the setiferous pores on each side of clypeus unusually large, antennæ rather long, filiform, joint 3 quite a third longer than 2. Prothorax convex, slightly though evidently wider than head, a sixth wider than long, base produced at middle and slightly emarginate on each side, rather narrower than apex, sides subangulate at two-fifths from apex, strongly contracted behind and sinuate near base, hind angles subtruncate, projecting a little laterally, without seta; transverse impressions fairly deep, median line fine but foveate where it meets the two impressions, a slight fovea on each side close to the angles, surface vaguely striate and finely punctate, coarsely across base Elytra convex, ovate, though with well-marked shoulders, fully two-thirds wider than prothorax, a half longer than wide, border slightly sinuate on each side near apex, striation obsolete, but stria 1 is visible though only faintly impressed, suture raised, surface a little uneven, a vague semi-smooth area at middle of sides and a smaller vaguer one at three-fourths, dorsal pores conspicuous at about a fourth and two-thirds respectively, surface finely and densely punctate, the patches of grey pubescence rounded and rather faint Microsculpture quite visible on the elytra, where the meshes are a little wider than long, isodiametric (where visible) on the prothorax and head, but very fine and indistinct on the latter

Length, 5 4-6 mm

Distribution PUNJAB. Spiti, Manikarn (G Babault), Simla Hills, Asni, 3600-4000 feet (B N Chopra) UNITED PROVINCES Kumaon, West Almora (H G Champion), Haldwani division, Kaldbunga (H G. Champion), Chakrata division, Binal Gad, 7000-8000 feet, Bodyar, 8300 feet, Manjgaon, 6500 feet, Tadi Gad, 7000 feet (all S N Chatterjee) BENGAL: Kalmpong (F H Gravely) ASSAM Darrang, Dorphang Valley (S W. Kemp)

Type in the British Museum

291 *a* *Asaphidion championi* var *lutipes*, var nov.

In this variety the femora are mainly pale ferruginous, but otherwise it does not differ from the type-form.

Distribution NORTH-WEST FRONTIER PROVINCE Hazara, Upper Kagan Valley, Narang, 8000 feet (*H G Champion*)

Type in the British Museum

292 *Asaphidion obscurum*, Andr [Plate V, fig 1.]

Asaphidion obscurum Andrewes, Ent. Month Mag 1925, p. 52, t 1, f 1.

Colour reneous, upper side dull, covered with short recumbent grey pubescence, mottled on the elytra, legs and antennæ with some metallic lustre, underside metallic and shiny; joints 1 to 4 of antennæ at base and tibiae reddish

Head a little wider than prothorax, the surface closely reticulate-punctate, antennæ short and compact, joint 2 a little shorter than 3 Prothorax convex, a fourth wider than long, both extremities produced at middle, base not emarginate at sides, rather narrower than apex, sides rounded, sharply contracted behind, the hind angles inconspicuous, slightly obtuse, without seta, median line fine, not reaching extremities, front transverse impression deep at middle, base depressed, with rather slight foveæ at sides, surface reticulate-punctate Elytra elongate-ovate, with square shoulders, a little more than a half wider than prothorax, nearly two-thirds longer than wide, emarginate on each side near apex, the outer angle of the emargination conspicuously toothed, surface fairly even, without striation, covered with rather fine shallow punctures, not very closely placed, a slight uneven raised area just outside the hind dorsal pore, which is shallower and less conspicuous than the front one, no smooth areas along sides Microsculpture isodiametric, though more or less concealed by the pubescence

Length, 3 75-4 2 mm

Distribution UNITED PROVINCES Garhwal, Dudhatoli, 8000-10,000 feet (*H G. Champion*), Chakrata division, Bear Garden, 6000 feet, and Saharanpur division, Siwalik Hills (both *H G. Champion*), Dehra Dun (*S Bahadur*), Dehra Dun, River Song (*M Cameron*)

Type in the British Museum

293 *Asaphidion cuprascens*, Andr [Plate V, fig. 2]

Asaphidion cuprascens Andrewes, Ent. Month Mag 1925, p. 53, t 1, f 5

Colour of the upper surface bronze, subsericeous, closely covered with a short recumbent grey pubescence, mottled

with brown on the elytra, underside, legs, and antennæ teneous; joints 1 to 3 of antennæ at base and middle of tibiæ reddish

Head a little wider than prothorax, surface reticulate-punctate; eyes large but a little less prominent than in the other species, antennæ submoniliform, joint 3 hardly longer than 2. *Prothorax* convex, a little wider than long, both base and apex produced at middle, base with its sides oblique but not emarginate, a little narrower than apex, sides rounded and strongly contracted behind, hind angles somewhat obtuse and inconspicuous, without seta, median line fine, front transverse impression wide, base depressed, with only vague foveæ at sides, surface reticulate-punctate. *Elytra* ovate, with rather square shoulders, about three-fifths wider than prothorax, a half longer than wide, emarginate on each side near apex, the emargination obtusely angulate on the outer side; no regular striation, the surface a little uneven, with shallow inconspicuous puncturation, slightly raised in front of the hind dorsal pore, no smooth areas along sides; dorsal pores very distinct but only moderately impressed, at about a third and two-thirds. Microsculpture finely isodiametric where visible.

Length, 4.75 mm

Distribution UNITED PROVINCES : Haldwani division, Kald-bunga (*H. G. Champion*)

Type in the British Museum

294 *Asaphidion griseum*, Andr [Plate V, fig 3]

Asaphidion griscum Andrewes, Ent Month Mag. 1925, p. 54, t 1, f 6.

Colour. upper surface teneous green, mottled with moderately long conspicuous recumbent grey or light brown pubescence, underside, penultimate joint of palpi, antennæ, femora, apex of tibiæ, and tarsi dark metallic green, joint 1 of antennæ with base of joints 2 and 3 and middle of tibiæ ferruginous

Head evidently wider than prothorax, surface finely punctate-reticulate, some coarser puncturation in front, irregularly longitudinally striate between the eyes, antennæ submoniliform, joint 2 hardly shorter than 3. *Prothorax* convex, a little wider than long, extremities produced at middle, base narrower than apex, its sides slightly emarginate, sides rounded, sinuate a little before base, hind angles a little obtuse, inconspicuous, without seta, median line distinct, both base and apex transversely depressed, surface rather coarsely reticulate-punctate. *Elytra* ovate, a half wider than prothorax, two-thirds longer than wide, border very nearly reaching

hind angles of prothorax, emarginate on each side near apex, the emargination obtusely angulate on the outer side; no evident striation, but the surface is uneven, with vague impressions across base, along sides, and near the dorsal pores, which are placed at a third and three-fifths respectively, apical pore large and conspicuous, surface rather finely and not very closely punctate, without any smooth areas along sides. The microsculpture, where not concealed by the pubescence or masked by irregularities of surface, is quite clear and isodiametric.

Length, 4.8 mm

Distribution EASTERN DUARS (H. Stevens)

Type in my collection This example is at present unique

The species is more densely pubescent and more variegated in colour than any other known to me.

295. *Asaphidion viride*, Andr [Plate V, fig 4]

Asaphidion viride Andrewes, Ent Month Mag. 1925, p 54, t 1, f 7

Colour of the upper surface dark grass-green, base of prothorax cupreous, with a rather conspicuous short recumbent light grey pubescence, mottled on the elytra, underside black, palpi, joints 1 to 4 of antennæ (rest fuscous), and legs ferruginous (tibiae lighter, tarsi darker)

Head depressed between the eyes, evidently wider than prothorax, longitudinally striate on each side, surface reticulate-punctate, antennæ filiform, joint 2 shorter than 3. Prothorax convex, not quite a third wider than long, base produced at middle, slightly emarginate on each side, a little oblique close to the angles, narrower than apex, strongly contracted behind, sides obtusely angulate at a fourth from apex, sinuate close to base, the hind angles right, projecting a little laterally, without seta; median line fine, front transverse impression obsolete, base depressed, vaguely foveate at sides, surface reticulate-punctate. Elytra ovate, two-thirds wider than prothorax, not quite a half longer than wide, border slightly sinuate on each side near apex, no striation, surface a little uneven along the middle of each elytron, two small smooth areas along sides at about a half and two-thirds respectively; dorsal pores very distinct, at a fourth and two-thirds, an additional non-setiferous pore in front of the small apical one and rather further removed from suture, surface finely and not very closely punctate. Microsculpture isodiametric, though a good deal concealed by the pubescence

Length, 4.5 mm

Distribution SIKKIM: Dikchu in the Tista Valley, 2000 feet (H. Stevens).

Type in my collection

This and a second example, both ♂♂, were "taken at evening on wet sand under the shade of huge boulder at edge of river"

296 *Asaphidion formosum*, sp nov [Plate I, fig. 9.]

Colour black, head and prothorax vaguely yellowish green, elytra mottled more distinctly with the same colour on the apical half and also along the sutural area, palpi, joints 1 to 4 of antennæ, and legs ferruginous; surface with a short recumbent light grey pubescence, forming vague patches on the elytra, which become rather more distinct at sides and towards apex

Head wider than prothorax, a slight carina on each side before the front supraorbital pore, surface finely vermiculate-punctate, antennæ stout, joint 2 shorter than 3. *Prothorax* convex, a third wider than long, base produced at middle, emarginate at sides, a fourth narrower than apex, sides subangulate at a third from apex, strongly contracted behind and sinuate a little before base, hind angles slightly acute and projecting a little laterally, without seta; median line very fine, basal sulcus and foveæ moderately deep, surface finely vermiculate-punctate. *Elytra* ovate, with rather square shoulders, two-thirds wider than prothorax, a half longer than wide, border slightly sinuate on each side behind, no striation, though there is a vague longitudinal impression on the middle of each elytron and two or three smaller but deeper ones along the margins, surface otherwise fairly even, finely and indistinctly punctate, dorsal pores large, deep, and shiny at bottom, at about a fourth and three-fifths respectively. Microsculpture of the elytra formed by minute meshes, almost asperations, on average a little wider than long, on the head (except neck) and prothorax the microsculpture is concealed by the rough surface

Length, 5 mm

Distribution UNITED PROVINCES. Haldwani district (H. G. Champion)

Type in the British Museum. This is a unique specimen

297. *Asaphidion indicum*, Chaud [Plate V, fig 5]

Bembidium indicum Chaudoir *, Bull. Mosc. 1850, n, p 169 (note),
Asaphidion indicum Andrewes, Ent. Month. Mag. 1925, p 55
 t 1, f 9

Colour of the upper surface æneous, with traces here and there of green and blue, vaguely purplish on the basal half of the elytra, with a short inconspicuous grey pubescence

underside black with faint green reflections; joints 1 to 4 of antennæ (rest brown), palpi, and legs ferruginous, apex of femora, of tibiae, and of the tarsal joints often infuscate

Head nearly a fifth wider than prothorax, the surface strigose-punctate, neck very finely so, antennæ rather slender, joint 2 very little shorter than 3. *Prothorax* convex, a sixth wider than long, base slightly produced at middle, oblique, close to the angles, distinctly narrower than apex, sides obtusely angulate, hind angles slightly obtuse, not projecting, without seta; median line very fine, subfoveate at the point, where it joins the shallow front transverse impression, base compressed, almost constricted, a slight fovea on each side, surface closely reticulate-punctate. *Elytra* elongate-oval, a half wider than prothorax, quite three-fourths longer than wide, shoulders very square, border slightly sinuate on each side before apex; striation only vaguely defined, suture a little raised behind, surface nearly even, a little impressed between the dorsal pores, which are placed at a fourth and three-fifths respectively, apical pore indistinct, surface moderately and closely punctate, a little less closely towards apex, without any smooth areas at sides, the pubescence inconspicuous, hardly forming any distinct patches. The micro-sculpture, where visible between the punctures on the elytra, consists of rather faint nearly isodiametric meshes. *Sterna* punctate and slightly pubescent; the striation on the first ventral segment is obsolete.

Length, 4 mm.

Distribution. PUNJAB: Simla (*Boys*); Kotgarh (*S. N. Chatterjee*); Dharmshala and Mandi, Dhalu (*H. G. Champion*). UNITED PROVINCES: Dehra Dun, Dobhalwala, West Almora and Haldwani (*H. G. Champion*), Mussooree, Woodstock Falls (*M. Cameron*) and Dhobi Ghat (*M. Bose*); Chakrata division, Konain and Bindal Gad (*M. Cameron*), Jaunsar (*H. G. Champion*), Bodyar, Chulli Khud, Kanasar, Sijla Gad, Mangaon, and Dodora Khud (all *S. N. Chatterjee*). BENGAL: Sitamarhi, Darjeeling (*R. W. G. Hingston*), Kurseong (*F. H. Gravely*); Ghum district, Tiger Hill (*M. Cameron*).

Type in Mr René Oberthür's collection

298 Asaphidion substriatum. Andr [Plate V, fig. 6]

Asaphidion substriatum Andrewes, Ent Month Mag 1925, p 56, t. 1, f 10.

Colour of the head and prothorax dark green, the elytra seneous, with some purplish patches near base, underside greenish seneous, ventral surface brown, joints 1 to 4 of antennæ and legs ferruginous, rest of antennæ and tarsi fuscous. Pubescence very slight and almost invisible.

Head very slightly wider than prothorax, surface coarsely rugose-punctate, longitudinally striate between the eyes, neck minutely striate, antennæ submoniliform, joint 3 hardly longer than 2. *Prothorax* convex, a seventh wider than long, base rather narrower than apex, produced at middle, sub-emarginate on each side, oblique quite close to the angles, sides sharply rounded in front but not angulate, strongly sinuate near base, hind angles projecting laterally, rather sharp, though slightly obtuse, without seta, median line fairly deep, not reaching extremities, front transverse impression obsolete, base depressed, with a slight fovea on each side near the angles, surface coarsely rugose-punctate. *Elytra* ovate but with square shoulders, rather more than a half wider than prothorax and as much longer than wide, border slightly sinuate on each side near apex, vaguely striate and uneven, chiefly on the basal half, stria 1 rather more distinct than the others, 3 very irregular, dorsal pores large and conspicuous, at about a third and two-thirds respectively, surface covered with punctures of moderate size, fairly close together and closer towards base than apex, two small smooth shiny areas at sides at about a half and three-fourths respectively, the faint pubescence in certain lights forming vague, hardly visible patches. Microsculpture irregular on the elytra, the meshes on average wider than long and quite distinct between the punctures, on the head and prothorax the meshes are moderately wide but almost completely concealed by the puncturation.

Length, 4 4 mm

Distribution PUNJAB Seraj, Jibhi, 6000 feet (H. G. Champion). UNITED PROVINCES West Almora (H. G. Champion)

Type in the British Museum

299. *Asaphidion ornatum*, Andr [Plate V, fig. 7.]

Asaphidion ornatum Andrewes, Ent Month Mag 1925, p 57.
t 1, f 11

Colour dark bluish green beneath, bronze-green above, sides of elytra bright metallic green, with short grey pubescence, elytra each with a wide purple stripe of irregular outline down the middle, reaching to three-fourths from base, joints 1 to 4 of antennæ, femora, and tibiae flavous, rest of antennæ, apex of tibiae, and tarsi fuscous

Head rather wider than prothorax, a slight ridge on each side in front, the surface closely and confluent punctate, substriate behind, antennæ fairly long, filiform, slightly dilated towards apex, joint 2 clearly shorter than 3. *Prothorax* convex, about a fourth wider than long, base strongly

produced at middle, slightly emarginate on each side, narrower than apex, sides obtusely angulate, sinuate close to base, hind angles nearly right but rather rounded and inconspicuous, without seta; median line short but clearly cut, base transversely depressed, with a shallow fovea on each side, surface closely and confluent punctate *Elytra* ovate but with square shoulders, about three-fifths wider than prothorax, a half longer than wide, border sinuate on each side near apex; no regular striation, but intervals 3, 5, and 7 irregularly raised, with some depressions along their margins, the suture raised towards apex; dorsal pores large and conspicuous, at about a fourth and two-thirds respectively, and within the purple area; surface finely and closely punctate, a little less closely here and there at sides, with some patches of grey pubescence Microsculpture formed by somewhat transverse meshes, largely concealed by the puncturation and pubescence

Length, 4-4 75 mm

Distribution UNITED PROVINCES. West Almora (*H. G. Champion*), Mussooree, Dhobi Ghat (*M. Basc*); Chakrata division, Konain (*M. Cameron*), Bindal Gad (*M. Cameron* and *S. N. Chatterjee*), Bear Garden (*H. G. Champion*), Bodyar (*S. N. Chatterjee*).

Type in the British Museum

300. *Asaphidion triste*, sp nov. [Plate I, fig 3]

Colour black, head and prothorax teneous, elytra vaguely teneous along sides, underside with some metallic reflections, base of palpi, basal half of joints 1 to 4 of antennae, femora and tibiae (except at extremities), and first tarsal joint ferruginous. The surface covered with a short grey pubescence.

Head as wide as prothorax, surface (except neck) finely strigose-punctate, antennae stout, dilated at apex, joint 3 evidently longer than 2. *Prothorax* convex, about a fifth wider than long, base produced at middle, emarginate on each side, rather narrower than apex, sides strongly rounded, subangulate a little before middle, sinuate before base, front angles blunt but projecting a little forward, hind angles sharply rectangular, projecting a little laterally and furnished each with a pore and seta, median line moderately deep at middle, not reaching extremities, basal sulcus and foveæ rather shallow, surface closely, finely, and confluent rugose-punctate *Elytra* moderately convex, nearly a half wider than prothorax, a little more than a third longer than wide, border not sinuate before apex, striation vague and irregular but visible here and there, so that the surface, which is finely and densely punctate, has a somewhat rough appearance,

the rather vague patches of grey pubescence not masking the puncturation, dorsal pores large but not very deep, at about a fourth and three-fifths respectively. Microsculpture of the elytra distinct, formed by fine lines irregularly disposed, practically none visible on the head (except neck) or on the prothorax, owing to the irregular surface

Length, 4.25 mm

Distribution BENGAL · Darjeeling SIKKIM : Lepchajagat, 7000 feet (*J. C. M. Gardner*)

Type in the British Museum

The left elytron is missing in the unique specimen, which is otherwise in fair condition. The presence of a seta at the hind angles of the prothorax, unknown in the other Indian species of the genus, seems to show some affinity with *A. semilucidum* Motch. from China and Japan.

Genus BEMBIDION.

- Bembidion* Latreille, Hist Nat Crust et Ins w, 1802, p. 82; Müller, Kol. Rundsch 1918, p. 26, Andrewes, Key to the Tibetan species of *Bembidion*, Trans Ent Soc. Lond. 1930, p. 10, Jedlicka, Bestimmungstabelle der mir bekannten *Bembidion*-Arten aus China, Acta Soc ent Čech. xxx, 1933, p. 1.
Ocydromus Schellenberg, Helv. Ent. u, 1806, pp 16-17
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Chlorodium Motchulsky, Bull. Mosc. 1864, u, p. 182.
Plataphus Motchulsky, Bull. Mosc. 1864, u, p 184
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Andrewesa Netolitzky, Wien Ent Zeit 1931, p 180
Thaumaloperyphus Netolitzky, Att Mus Civ Trieste, xii, 1934, p 95

TYPE, *Cicindela quadrimaculata* L. (Palaearctic and Nearctic regions)

Colour generally black, blue, or green, often with pale spots or fasciae on the elytra

Body glabrous, usually elongate and shiny, more rarely dull, the elytra nearly always exhibiting a microsculpture, which sometimes extends to the head and prothorax

Head usually with more or less large and prominent eyes, adjoining the buccal fissure, with two supraorbital setæ; frontal furrows nearly always present, generally deep, parallel, and uneven, sometimes diverging a little behind and sometimes extending on to the clypeus, more rarely converging in front, and quite exceptionally duplicated, antennæ of varying length, nearly always filiform, but at times moniliform, fully pubescent from joint 4, but joint 3 is also moderately pubescent, labrum transverse, generally truncate, sexsetose, clypeus transverse, bisetose, the clypeal suture lightly impressed, mandibles rather short, the right one slightly toothed at base; mentum with a small tooth in the emargination; ligula bisetose, paraglossæ narrower than ligula and extending a little beyond it, maxillæ hooked at apex and furnished with a row of bristles along the inner margin, outer lobe two-jointed, maxillary palpi with the penultimate joint pubescent and strongly dilated at apex, the apical joint very small, subulate, labial palpi similar but much smaller, surface frequently impunctate but often with one or two fine punctures at sides behind, rarely coarsely punctate

Prothorax cordate or quadrate, base usually a little produced at middle, its sides horizontal but sometimes a little oblique, the sides bisetose, the hind angles as a rule sharply rectangular, often with a small longitudinal carina adjoining the angle, median line generally fine, sometimes much deeper close to base, the front transverse impression shallow, the hind one deeper, the basal foveæ often small but nearly always fairly deep, the base more or less depressed, usually uneven, and frequently punctate, the disk practically impunctate

Elytra nine-striate, stria 1 nearly always present and at least moderately deep throughout, 8 sometimes resembling the other striae but generally deep on the apical half and joining 9 at about basal third, the other striae often fairly deep on the disk but frequently shallow at sides and obsolete towards apex, scutellary striole as a rule rather slight, a short apical stria usually present in continuation of stria 5 or stria 7, and a pore within it which stands out very clearly when, as sometimes happens, the stria disappears; the border behind the shoulder is generally smooth, but sometimes serrate, and after rounding the shoulder it continues inwards to a point opposite stria 4 or stria 5 without reaching the scutellum, occasionally a slight ridge, called the "clavicular fold," runs downwards from the termination of the border towards the mesosternum, two dorsal pores at about a third and two-thirds are nearly always present on interval 3, generally

adjoining stria 3, but sometimes on or near the middle of the interval, a third pore occurring quite exceptionally

The underside is usually smooth and impunctate, but sometimes the proepisterna are punctate and sometimes there are at least traces of pubescence on the venter, last ventral segment ♂ with a single seta on each side, ♀ with two setæ. In the ♂ protarsi the first two joints are dilated and produced inwardly at apex.

The microsculpture of the upper surface is in this genus a great aid to the identification of the different species. Sometimes it is wanting altogether, sometimes a network of isodiametric meshes covers the whole of the upper surface, sometimes the elytra are covered with extremely fine transverse lines, visible only under the microscope ($\times 80$), but much more often they exhibit a reticulation of more or less transverse meshes, frequently obsolete on the head and on the disk of the prothorax, though the neck nearly always shows traces of isodiametric meshes.

Range World-wide

These insects frequent damp places and are usually found on the shores of lakes, rivers, and streams from sea-level to snow-level, *B. nivicola* having been discovered at the base-camp of the Mount Everest Expeditions at 16,500 feet. In India very few species are found in the plains, the great majority frequenting the Himalayan valleys, where they seem to be amongst the commonest insects at from 3000 to 10,000 feet. So many of these valleys are still awaiting entomological exploration that many new species will no doubt be added in future years to the 104 of which the descriptions are recorded here.

The larvæ of some European species have been described, but nothing appears to be known of the early stages of those comprised in the Indian fauna.

The palearctic species have been very fully dealt with in recent years by Dr F. Netolitzky, whose numerous works should be studied by any one working at the genus, and by Dr. J. Muller, who has published a key to the European and circum-Mediterranean species; but the foundations of this had already been laid many years ago by Ganglbauer, in his 'Käfer von Mitteleuropa'. In these works use is made of a large number of subgenera, designed chiefly for the reception of European species, and a list of such of these as appear to be connected with the Indian fauna, along with the necessary references, has been given here. Many of the Indian species, however, cannot be accommodated in the palearctic scheme, and rather than add further names to the already overburdened subgeneric list I have, in the subjoined keys, divided them into groups, each of which bears the name of the species.

first described in that group. These keys are intended for the ready determination of the Indian species, so far as they are at present known, and, had they been prepared on strictly phylogenetic lines, a considerably larger number of groups would have been required, many of them containing one species only. In the present state of our knowledge it has not seemed desirable to attempt this, and the grouping therefore in certain cases, e.g., the *kara*-, *varium*-, and *niloticum*-groups, is an artificial one, the species included in them being for the most part not nearly related to each other.

Key to the Groups of Bembidion

- 1 (6) Border of elytra angulate at shoulder.
- 2 (3) Lateral margin of elytra serrate and setulose *quadricolle*-group, p. 97.
- 3 (2) Lateral margin of elytra not serrate and setulose
- 4 (5) Elytra with parallel or gently rounded sides, dorsal pores on interval 3, microsculpture reticulate or absent, colour bronze or teneous *loricatum*-group, p. 102
- 5 (4) Elytra with the sides strongly rounded, dorsal pores small, adjoining stria 3, microsculpture formed by fine transverse lines, colour green or blue
- 6 (1) Border of elytra rounded at shoulder
- 7 (8) Head coarsely punctate except along median line, frontal furrows parallel but short and shallow, prothorax without carina in the hind angles, microsculpture isodiametric; colour teneous or cupreous [p. 108.
compactum-group,
- 8 (7) Head smooth, sometimes with one or two punctures at sides of vertex, rarely on disk, frontal furrows generally deep and parallel, more rarely converging in front
- 9 (34) Head with the frontal furrows parallel and generally uneven
- 10 (33) Elytra with the dorsal pores on or adjoining stria 3
- 11 (12) Prothorax with the median line shallow in front, deep and sulciform behind, proepisterna with some coarse punctures; apical stria obsolete, the pre-apical pore isolated
- 12 (11) Prothorax with the median line not deeper behind, proepisterna nearly always impunctate
- 13 (32) Metasternal process bordered, at least behind, or at sides
- 14 (15) Venter with some slight scattered pubescence, elytral striae entire .
- 15 (14) Venter glabrous, elytral striae sometimes entire, but often evanescent at sides and behind *kara*-group, p. 113

- 16 (17) Prothorax generally subquadrate, the sides behind nearly straight, the hind angles obtuse, elytral intervals with an irregular row of minute punctures down the centre of each; elytra æneous, legs and antennæ black or piceous [p. 115.
punctulipenne-group,
- 17 (16) Prothorax cordate; elytral intervals without punctures other than the dorsal pores
- 18 (23) Second elytral stria hardly shallower towards apex, base of prothorax not coarsely punctate
- 19 (20) Elytra flat, the striae lightly impressed; prothorax large, its base rugose or strigose, but practically impunctate, microsculpture reticulate, nearly as visible on prothorax as on elytra [p. 120.
nivicola-group,
- 20 (19) Elytra more or less convex, the striae on disk punctate and moderately deep; prothorax with its base often finely punctate; microsculpture nearly always reticulate, but generally invisible on disk of prothorax.
- 21 (22) Legs and antennæ black or piceous, joint 1 of antennæ (rarely 2 also), tibiae, and tarsi sometimes reddish; second elytral stria equally deep throughout [p. 124.
kaschmirensis-group,
- 22 (21) Legs and at least joint 1 of antennæ more or less pale, second elytral stria sometimes a little shallower towards apex [p. 134.
eutherum-group,
- 23 (18) Second elytral stria evidently shallower at or disappearing before apex
- 24 (31) Elytra unicolorous, or, if pale, sometimes with a dark discal spot, if dark, the apical border sometimes tinged with red (Exceptionally in dark species a vague apical spot is just visible on the elytra)
- 25 (26) Antennæ and legs black or dark ferruginous, elytra bronze or æneous [p. 141.
bramimum-group,
- 26 (25) Antennæ with at least joint 1 and the base of joints 2 and 3, together with the greater part of legs, ferruginous to flavous
- 27 (30) Elytra black, dark green, or blue
- 28 (29) Apical stria of elytra present and generally well developed, the pre-apical pore inconspicuous [p. 143.
bracculatum-group,
- 29 (28) Apical stria of elytra obsolete, the pre-apical pore isolated or, at least, standing out very clearly
- 30 (27) Elytra pale, with or without a dark discal spot
- 31 (24) Elytra bi- or tricolorous
- 32 (13) Metasternal process unbordered or with only a rudimentary border, small dark æneous or greenish species [p. 156.
radians-group, p. 181

10 (I) Colour bright bronze, striae normally punctate close to base and apex, formed elsewhere by half moon-shaped transverse punctures (convex forwards), quite as wide as the smooth intervals between the rows, the meshes of the microsculpture very clear, isodiametric throughout
Length 5-5.5 mm

[p. 101.
luniferum, Andr.,

301. *Bembidion splendens*, Andr.

Bembidium splendens Andrewes, Ent Month Mag. 1923, p. 95

The species is closely allied to *B. xanthacrum*, but differs in the following particulars, among which the larger size is perhaps the most evident. The upper surface is darker and there are sometimes blue as well as green reflections, while the paler parts are flavous, the legs entirely so, and the pale area at the apex of the elytra is larger. Head similar, the frontal furrows obsolescent. The prothorax is slightly wider and flatter, but otherwise differs only in having a rather shallower basal sulcus. On the elytra the striae are less impressed, obsolete near apex, the punctures in them finer and more numerous, the microsculpture is rather finer, with somewhat wider meshes.

Length, 5-7 mm

Distribution UNITED PROVINCES : West Almora, Ramkhet, and River Sarda Gorge, all in Kumaon, Jaunsar, in the Chakrata division (all H. G. Champion).

Type in the British Museum

302 *Bembidion xanthacrum*, Chaud.

Bembidium xanthacrum Chaudour *, Bull Mosc 1850, II, p. 175 (note); Andrewes, Ent Month Mag. 1921, p. 249

Bembidium xanthotelum Bates *, Ann Mus Civ Gen xxxii, 1892, p. 287; Andrewes, Ann Mag Nat. Hist (9) III, 1919, p. 472

Colour bronze-green above, piceous beneath, apex of venter ferruginous, palpi, joints 1 to 3 of antennæ, with basal half of joint 4, base and apex of femora, tibiae, tarsi, and apex of elytra, covering from a sixth to an eighth of their length, flavous, rest of femora and extreme apex of tibiae and tarsal joints piceous.

Head with short shallow furrows, a slight longitudinal engraved line at each end of the clypeal suture, eyes large and moderately prominent, antennæ filiform, reaching basal fifth of elytra. *Prothorax* moderately convex, subquadrate, contracted more in front than behind, two-fifths wider than head, three-fifths wider than long, base bisinuate,

front angles projecting forward, sides nearly straight in front and behind, rounded (sometimes subangulate) at about middle, sinuate quite close to base, hind angles sharply rectangular, with a very slight carina, median line slight, basal sulcus moderately deep between the short foreax, the base bordered on each side between the foreax and the angle, surface smooth, basal area somewhat uneven. *Elytra* moderately convex, oval, a sixth wider than prothorax, nearly two-thirds longer than wide, border serrate, making a sharp angle at shoulder and extending inwards to the base of stria 4; punctate-striate, the striae fine, the punctures very small, disappearing towards apex, 8 deep, joining the marginal channel behind shoulder, scutellary striole very fine, apical stria deep; intervals nearly flat, 3 with two pores adjoining stria 3, surface smooth. Microsculpture isodiametric and coarsely engraved on the head; on the prothorax and elytra the meshes, which average about twice as wide as long, are more finely impressed, and the surface is shiny. *Sternum*: prosternal process coming to a sharp point; metasternal process unbordered.

Length, 4 5-5 25 mm

Distribution BOMBAY: Belgaum, Khanapur (*H. E. Andrews*) SIND: Karachi (*T. R. D. Bell*) PUNJAB: Simla. UNITED PROVINCES: Fyzabad (*R. W. G. Hingston*), Almora, Tanakpur, Ranikhet, and Jaunsar (*Chakrata*) (all *H. G. Champion*), Dehra Dun (*H. G. Champion* and *M. Cameron*) CENTRAL PROVINCES: Hoshangabad, Nerbudda River (*E. A. D'Abreu*) MADRAS: Manganallur, Nilambur (*C. F. C. Beeson*); Nellore, Mopad (*F. H. Gravely*) BENGAL: Sundarbans (*F. W. Champion*) BIHAR: Pusa; Chapra (*Mackenzie*), Dimapore ASSAM: Mangaldai (*S. W. Kemp*) BURMA: Ruby Mines (*Doherty*); Rangoon (*L. Fea*) SIAM LAOS TONG-KING.

Type in Mr. René Oberthür's collection; that of *xanthotelum* in the Genoa Civic Museum.

303. *Bembidion luridipenne*, Schaum.

Bembidium luridipenne Schaum*, Berl Ent Zeitschr 1860, p. 109;
Andrewes, Ann Mag Nat. Hist. (9) xx, 1927, p. 108

Colour of head and prothorax bronze-green; elytra (including the epipleura), palpi, antennæ, and legs flavous, but the elytra have the basal border, interval 9, and an elongate oval spot extending outwards to stria 4, reaching base but not apex, piceous with greenish reflections; underside piceous, venter brown.

Head as in *xanthacrum*, the antennæ a little shorter and thicker. *Prothorax* moderately convex, contracted more in

front than behind, about a third wider than head, nearly three-fifths wider than long, base bisinuate, front angles projecting forward, sides evenly rounded, with hardly a trace of sinuation before base, hind angles sharp, though slightly obtuse, without carina, impressions obsolescent except for the short, shallow basal foveæ, between which and the angles the base is bordered on each side, surface very smooth. *Elytra* moderately convex, oval, a fifth wider than prothorax, not quite three-fifths longer than wide, border serrate, making a sharp angle at shoulder, and extending inwards to the base of stria 4, punctate-striate, as in *xanthacrum*, but rather more lightly, the scutellary striae, apical stria, and dorsal pores all similar. The microsculpture of the head is isodiametric and very distinct, as in *xanthacrum*, but that of the prothorax and elytra is much finer, and on the elytra the meshes are strongly transverse (on average quite four times as wide as long). Pro- and metasternal processes similar.

Length, 4·5–5 mm

Distribution BENGAL: Calcutta (*F H Gravely*); Sundarbans (*F W Champion*) BIHAR. Pusa

Type in the Berlin University Zoological Museum

304 *Bembidion quadricolle*, Motch

Bembidium quadricolle Motchulsky, Insectes de la Sibérie, Mém Acad. Sci. St Pétersb v, 1844, p. 270, Müller, Kol Rundsch vii, 1918, p 55

Bembidium incerticeps Chaudoir *, Bull Mosc 1850, n, p. 173

Bembidium sp., Andrewes, Rec Ind Mus xvii, 1919, p 199, id., Ann Mag Nat. Hist (9) xiv, 1924, p 588.

Colour bronze, sides of upper surface sometimes greenish, venter mainly piceous, base of the palpi, underside of joint 1, and base of joints 2–4 of the antennæ, the middle of the tibiae, and most of tarsi ferruginous

Head with short shallow furrows, one or two slight striae on each side adjoining eye; eyes large and moderately prominent, antennæ slender, filiform, extending a little beyond base of elytron, surface smooth. *Prothorax* moderately convex, subquadrate, contracted in front but hardly so behind, quite a third wider than head, nearly three-fifths wider than long, nearly as wide at base as at middle, gently rounded in front, faintly sinuate behind, the front angles projecting rather sharply forwards, the hind angles sharp but slightly obtuse, with only a vestige of a carina, median line and front transverse impression very slight, basal sulcus moderately deep between the very short foveæ, the base bordered on each side between the fovea and the angle, surface smooth. *Elytra* rather flat, oval, a fourth wider than prothorax, a half longer than wide, border serrate, making a sharp angle

at shoulder and continued inwards to the base of stria 4; punctate-striate, the striae very shallow, the punctures conspicuous in front but tending to disappear behind, 8 deep, joining marginal channel behind shoulder, scutellary striole and apical stria well developed, intervals flat, 3 with two pores adjoining stria 3, surface smooth Microsculpture isodiametric, conspicuous, so that the surface is only moderately shiny *Sternum* metasternal process unbordered

Length, 4 75-5 25 mm

Distribution SEISTAN : Nasratabad (*S. W. Kemp*) IRAK.
ASIA MINOR SOUTH-EAST EUROPE

Type in the Moscow University Museum ; that of *inserticeps* in Mr René Oberthür's collection

305. *Bembidion discordans*, Net

Bembidion discordans Netolitzky *, Att Mus Civ. Trieste XII, 1934, p 89

This species differs very little either in size, colour, or form from small examples of *quadricolle* Motch, but the surface is dull and there are only traces of red on joint 1 of the antennae and on the basal half of the tibiae Head and prothorax similar to those of *quadricolle*, but the basal foveæ of the latter are shallower and more finely engraved On the elytra the puncturation of the striae is much finer ; on the basal two-thirds the striae are not impressed but are formed by the punctures, but on the apical third the striae are lightly impressed and the punctures have almost disappeared The eighth stria is impunctate The microsculpture is similar, though more distinct

Length, 4 6 mm

Distribution KASHMIR · Shigar, 7000 feet

Type in the Milan Civic Museum This is at present unique.

306 *Bembidion luniferum*, Andr [Plate III, fig. 4]

Bembidion luniferum Andrewes, Ent Month Mag 1924, p 192.

Colour of the upper surface bright bronze, under surface darker, metallic green, metasternum and venter nearly black, with metallic reflections, palpi, apex of elytra (rather narrowly), base of femora, a wide ring round tibiae, and tarsi more or less ferruginous Joints 1-2 of the antennæ are brassy, the rest black, but the underside of joint 1 is red The dark apical half of tibiae has a strong bluish reflection

Head wide, with very large eyes, coarsely shagreened and therefore rather dull, a brighter slightly greenish area along inner margin of eye, a short ridge on each side in front, no frontal furrows ; antennæ short and thick *Prothorax* rather flat, but declivous to front angles, a third wider than head

and as much wider than long, widest at base, which is strongly bisinuate at middle, oblique at sides, apex considerably narrower than base, emarginate, but straight in the middle, the front angles, though rounded, projecting a good deal forwards, sides nearly straight to middle, thence barely contracted and sinuate near hind angles, which are sharp, right, and project laterally, with a well-marked carina, a little removed from the narrow side-border; both basal and apical transverse grooves well marked, the fine median line between them continued faintly to extremities, the basal groove at middle removed from margin over a little more than half the width, basal foveæ obsolete, surface shagreened but moderately shiny, faintly rugose-punctate in front of the basal groove, chiefly near hind angles. Elytra moderately convex, elongate-oval, a third wider than prothorax, a half longer than wide, border finely serrate, forming an angle at shoulder and continuing inwards to a point where striae 4 and 5 almost or quite join, the striae impressed only near apex, punctate close to base and apex, formed elsewhere by half-moon-shaped transverse punctures (convex forwards), as wide as or wider than the smooth intervals between the rows, stria 8 very deep, joining 9 at basal fourth, scutellary striae rather long, apical stria deep, joining 7; intervals flat, the two pores on 3 near stria 3, at about two-fifths and three-quarters from base, surface smooth and rather shiny. Microsculpture rather coarsely isodiametric throughout. Underside smooth and glabrous; metasternal process unbordered.

Length, 5-5.5 mm.

Distribution UNITED PROVINCES: Fyzabad (R. W. G. Hingston), Naini-Tal district, Kaladhungi (R. Hodgson).

Type in the British Museum, co-types in the Indian Museum, Calcutta, and in my collection.

This is one of the most distinct forms known to me in the genus, the wide lunate pores in the elytral striae distinguishing it at once from all other Indian species.

Key to the loricatum-group

- 1 (4) Head with the inner margin of the front supraorbital pore carinate, micro-sculpture very distinct. Length 5 mm.
- 2 (3) Prothorax with the base hardly wider than the apex, elytra with the border forming a very obtuse angle at shoulder, surface dull, the dorsal pores on each side occupying the whole of the interval, the micro-sculpture formed by meshes slightly wider than long

[p. 103.
loricatum, Andr.,

- 3 (2) Prothorax with the base evidently wider than the apex, elytra with the border forming a right angle at shoulder, surface shiny, dorsal pores rather small, microsculpture formed by isodiametric meshes .. . [p 104
chalcodes, sp nov ,
- 4 (1) Head with a pair of carinae on each side, surface bright, dorsal pores small; no microsculpture. Length 3.5 mm . [p. 104.
stratiiceps, sp nov ,

307. *Bembidion loricatum*, Andr. [Plate III, fig 5]

Bembidium loricatum Andrewes, Ent. Month Mag 1922, p 238.

Colour of the upper surface bright bronze, shagreened and not very shiny, underside piceous-black with slight greenish reflections; joints 1-2 of antennae and base of 3-4 (rest dark brown), palpi (penultimate joint fuscous), tibiae, and tarsi ferruginous, femora piceous bronze

Head with shallow furrows, vaguely striate near eyes, which are moderately prominent; surface with a few minute punctures on vertex; antennae barely reaching basal fourth of elytra. Prothorax moderately convex, a fourth wider than head, a third wider than long, base barely wider than apex, sides rounded and sinuate close to the hind angles, which are right, with a well-marked carina, median line fine, base depressed, with deep rounded foveæ, basal area finely rugose-punctate, with some traces of longitudinal striae, surface smooth with some faint cross-striation. Elytra moderately convex, with square shoulders and parallel sides, about a fourth wider than prothorax, five-sixths longer than wide, basal border forming an obtuse angle at shoulder and continuing inwards to the base of stria 4, finely punctate-striate, 1 continued to and deeper at apex, the rest obsolete behind, 8 deep throughout, joining the marginal channel behind shoulder, scutellary striae fairly long, apical stria faint, so that the pore is fairly conspicuous, intervals flat, 3 with two very large and conspicuous pores at a third and two-thirds, occupying the whole interval, the area surrounding the front one slightly transversely depressed, surface smooth. Microsculpture isodiametric, distinct throughout. Sternum: prosternal process rounded and inconspicuous; metasternal process unbordered, but with a depression behind it

Length, 5 mm

Distribution PUNJAB: Lyallpur (*K. N. Trehan*) UNITED PROVINCES Ranikhet, West Bhatkot, and West Almora, all in Kumaon (*H. G. Champion*), Fyzabad (*R. W. G. Hingston*). BIHAR. Pusa

Type in the British Museum

308. *Bembidion chalcodes*, sp nov.

Colour æneous, joints 1-2 of antennæ, with base of 3-4, and tibiæ ferruginous; rest of legs and antennæ piceous or very dark red

Head with rather shallow parallel furrows, bounded by an external carina on each side, surface impunctate; eyes only moderately prominent, antennæ extending little beyond base of elytra. *Prothorax* convex, subquadrate, about a third wider than head and as much wider than long, rather strongly contracted in front but not much behind, so that base is evidently wider than apex, sides rounded in front, hardly perceptibly sinuate behind, hind angles right, sharp, and with a well developed carina, median line fine, hind transverse depression fairly deep at sides, where it joins the basal foveæ, between which and hind angle on each side the base is bordered, surface nearly smooth, basal area with a few vague punctures. *Elytra* convex, ovate, a half wider than prothorax, three-fifths longer than wide, the border forming an angle at shoulder and continuing inwards to stria 4; finely punctate-striate, striae entire, 1 deep to apex, but all the rest much fainter behind, the outer fainter than the inner ones, the punctures very clear, stria 8 very deep, joining marginal channel behind shoulder, scutellary striole rather short, apical stria slight, joining 7, the pore clearly visible, intervals flat, 3 with two small pores on the interval, surface impunctate. Micro-sculpture isodiametric, finer on the prothorax than on the head and elytra. *Sternum*: metasternal process with a transverse groove behind it, the extremity (viewed from below) raised above the surrounding surface

Length, 5 mm

Distribution BASHAHR STATE

Type in my collection A unique specimen

Allied to *B. pogonoides* Bates from Japan and *B. vitiosum* Gemm. and Har from North-East Asia, but not quite agreeing with either of them

309 *Bembidion striaticeps*, sp nov

Colour brassy above, shiny, joints 1-2 of antennæ, with base of 3-4, and tibiæ ferruginous, rest of antennæ and legs and underside piceous or black

Head with fairly deep irregular furrows, diverging a little behind, a pair of carinae on each side, adjoining eye, continued forward to base of clypeus, the sulcus dividing them terminating at mid-eye level, two slight oblique striae on each side between them and vertex, eyes fairly prominent, antennæ small, moniliform, extending little beyond base of elytra; front finely punctate, vertex even more finely punctate.

Prothorax convex, cordate, a fifth wider than head, a half wider than long, base as wide as apex, rounded in front, sinuate a little before the hind angles, which are slightly obtuse but sharp and project a little laterally, a pronounced carina present; median line very fine, front transverse impression shallow, slightly rugose-striate, basal area coarsely rugose-punctate, surface generally sparsely microscopically punctate *Elytra* moderately convex, ovate, a half wider than prothorax and also a half longer than wide, somewhat dilated behind, the shoulders rather square, the border forming an obtuse angle at shoulder and continuing inwards to the base of stria 4, finely punctate-striate, the striae entire, very lightly impressed, and only a little shallower behind, the punctures very clear, 8 deep, joining marginal channel behind shoulder, scutellary striae and apical stria quite distinct, the latter joining stria 5, the surface adjoining and outside it slightly costate, intervals flat, an irregular line of microscopic punctures down the centre of each, 3 with two pores on the interval, but not far from stria 3. No microsculpture. *Sternum*: metasternal process unbordered

Length, 3.5 mm

Distribution PUNJAB: Simla Hills, 7000-8000 feet (*M. Cameron*)

Type in the British Museum. This is the only specimen seen. Perhaps allied to *B. aeruginosum* Gebl and other Siberian species, which are unknown to me in nature, but the basal border of the elytra instead of being rounded is clearly angulate at the shoulder

Key to the clarum-group.

- | | |
|--|--------------------------|
| 1 (2) Colour of the elytra very dark green,
antennae reaching basal third of
elytra, base of prothorax evidently
wider than apex; elytral striae
lightly impressed Length 4.5-6 mm | clarum, Andr., p. 105. |
| 2 (1) Colour of the elytra blue; antennae
reaching middle of elytra, base of
prothorax barely wider than apex,
elytral striae moderately deep Length
4.75-5 mm | cerydice, Andr., p. 107. |

310. *Bembidion clarum*, Andr.

Bembidion clarum Andrewes, Ent Month Mag. 1923, p. 98,
id., Ent Month Mag. 1926, p. 67
Bembidion clarum Jedlicka, Acta Soc. ent. Čech. xxx, 1933,
pp. 4 and 11

Colour of the upper surface black, with faint green or blue
reflections, elytra dark green or dark blue, underside piceous

black; joints 1-2 of antennæ and basal half of joints 3-4 (rest fuscous), palpi, venter, and legs ferruginous, surface shining and (to the naked eye) quite smooth

Head with fairly deep parallel furrows, extending to clypeus; eyes moderately prominent, antennæ slender, reaching basal third of elytra, surface impunctate. Prothorax small, convex, cordate, a little wider than head and about a third wider than long, extremities truncate, a distinct border at sides of apex, sides gently rounded and sinuate at a fifth from base, hind angles right, with a small but distinct carina; median

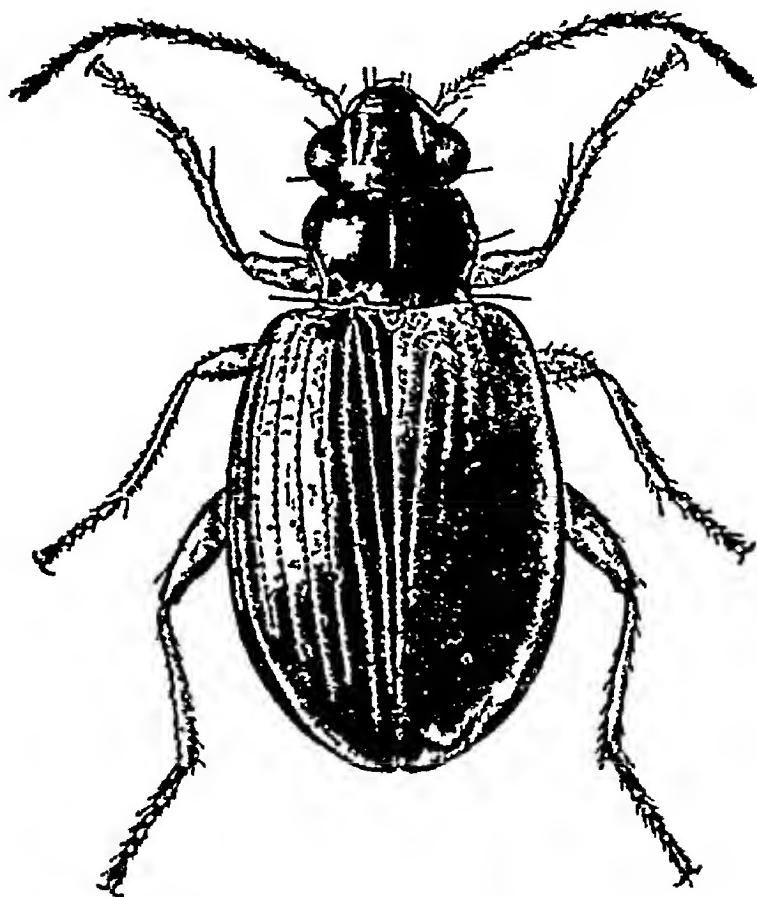


Fig. 18—*Bembidion clarum* Androwes

line moderately impressed, widening to a shallow furrow close to base, which is rather lightly depressed, foveæ deep and rounded, surface smooth, base indistinctly rugose-punctate. Elytra moderately convex, ovate, twice as wide as prothorax and a little more than a half longer than wide, shoulders rather rounded, but the basal border, which is very short, extending between striae 5 and 6, meets the lateral border at a sharp angle, finely punctate-striate, more faintly at sides and behind, though the punctures are visible to near apex, stria 1 deep throughout, 8 deep behind, joining the marginal

channel behind shoulder, scutellary striole fairly long, apical stria very slightly developed, joining 5, intervals flat, 1 very narrow and carinate at apex, 3 with two large pores, adjoining stria 3, at about a third and two-thirds respectively. The microsculpture consists of excessively fine transverse lines placed very close together, visible only under a high power ($\times 80$). Metasternal process bordered at sides only, between the mesocoxæ

Length, 4-5-6 mm

Distribution UNITED PROVINCES : West Almora, Chakrata, Khasula, Ranikhet, Tanakpur, Naini-Tal, Upper Gumti Valley, Sarda and Gori River Gorges (all *H. G. Champion*) GARHWAL : Suni Gad (*H. G. Champion*) SIKKIM : Gielle Khola in the Tista River Valley (*H. Sterens*) ASSAM : Yambung and Janakmukh, bank of Dihong River (*S. W. Kemp*) ; Naga Hills and Manipur, Shugnu (*S. N. Chatterjee*)

Type in my collection

There is considerable variability, in addition to differences of size and colour, in the numerous specimens examined, but all seem to belong to one species. The prothorax is sometimes more rounded in front and more strongly sinuate behind; the striae of the elytra and their punctures are sometimes deeper than in the typical form, and occasionally the fragment of basal border is obsolete.

311 *Bembidion eurydice*, Andr

Bembidium eurydice Andrewes, Ent. Month. Mag. 1926, pp 67 and 73.

Colour beneath piceous, the venter pale brown; head and prothorax dark metallic green, elytra dark blue; joints 1 and 2 of the antennæ, with the basal half of joints 3 and 4, and the whole of the palpi and legs pale flavous, rest of antennæ fuscous.

Head with deep parallel furrows, extending on to clypeus; eyes prominent; antennæ fairly thick and long, reaching middle of elytra; surface impunctate. Prothorax rather small, cordate, moderately convex, a little wider than head and a third wider than long, base barely wider than apex, sides rather strongly rounded in front and sinuate at a fourth from base, hind angles right, sharp, and projecting a little laterally, with a small carina; median line fine, widening into a shallow furrow close to base, front transverse impression shallow, hind one fairly deep, foveæ small but distinct, surface smooth, the whole basal area rugulose. Elytra convex, ovate, not quite twice as wide as prothorax and not quite a half longer than wide, sides strongly rounded, basal border very short, between striae 5 and 6, meeting side-border at a sharp angle; punctate-striate, dorsal striae fairly deep, 1, 2,

and 8 also fairly deep near apex, lateral striae a little shallower, especially 7, 8 joining marginal channel behind shoulder, scutellary striae not very long, apical stria moderately deep, joining 5; intervals moderately convex, 1 very narrow near apex, 3 with two pores, at a third and two-thirds, adjoining stria 3. The microsculpture of the elytra consists of extremely fine transverse lines, visible only under a high power ($\times 80$); on the head and prothorax there is a reticulation, the meshes of which are mostly wider than long. Underside glabrous, metasternal process unbordered

Length, 4.75–5 mm

Distribution UNITED PROVINCES Kumaon, Gori River Gorge, 5000–9000 feet (H. G. Champion)

Type in the British Museum.

Key to the compactum-group.

1 (2) Head punctate but not striate; prothorax cordate, barely a third wider than long, elytra shiny, with only a faint microsculpture (♀)
Length 4.25–4.75 mm

[p. 108.
compactum, Andr.,

2 (1) Head striate-punctate, prothorax subquadrate, more than a half wider than long, elytra cupreous, dull, the microsculpture (♀) very distinct Length 4 mm

beesonii, Andr., p. 109

312. *Bembidion compactum*, Andr. [Plate III, fig 7]

Bembidium compactum Andrewes, Ent Month Mag. 1922, p. 240.

Bembidion compactum Jedlicka, Acta Soc ent Czech xxx, 1933, pp 2 and 5.

Colour of the upper surface cupreous, sometimes brassy, and occasionally with purplish blotches, underside black, joints 1–2 of antennæ, with the base of 3–4, palpi, and legs ferruginous, rest of antennæ, penultimate joint of palpi, and knees fuscous

Head with shallow furrows, extending on to clypeus, which is bordered in front, eyes rather flat, antennæ reaching basal fourth of elytra, surface punctate, sparsely on vertex, middle of front and neck smooth *Prothorax* cordate, very convex, very little wider than head and barely a third wider than long, extremities truncate, sides of base slightly oblique, sides moderately rounded and sinuate close to the hind angles, which are right, though they project a little laterally, without trace of carina, median line fairly deep, confined to disk, base deeply depressed, almost constricted, foveæ hardly distinguishable, the whole basal area coarsely rugose-punctate, occasionally with some punctures along front margin, surface otherwise smooth, with some vague cross-striation *Elytra*

convex, with very square shoulders, sides nearly parallel, the border rounding the shoulder and reaching a point between striae 4 and 5, nearly twice as wide as prothorax and about a half longer than wide, striae closely and moderately punctate, all deep to apex, though 4-6 are a little fainter behind, scutellary striole very long, extending to quite a third from base, apical stria deep, forming an integral part of stria 7, intervals convex, especially at sides, 3 with two large pores at about a third and two-thirds, the surrounding area depressed near the front one, surface smooth and shiny Microsculpture practically absent in the ♂, formed by isodiametric meshes and confined to the elytra in the ♀. Sterna coarsely punctate at sides, metasternum with a few punctures at base and apex, metasternal process with a semicircular border, ventral surface smooth and impunctate

Length, 4 25-4 75 mm

Distribution UNITED PROVINCES : West Almora, Ranikhet, Bhatkot, Swal River Basin, River Sarda Gorge, and Haldwani (all *H G Champion*), Dehra Dun, River Jong (*S N Chatterjee*), Nim Nadi (*M Cameron*), Asan River (*J C M Gardner*), Phandowala, Suswa River (*H G Champion*), and Mothrawala, Rispana River ASSAM · Manipur, Shugnu (*S N Chatterjee*)

Type in the British Museum

Allied to the palaearctic species *punctulatum* Drap, but a shorter and more compact insect, differing somewhat in colour. The head and prothorax are much less punctate, the frontal foveæ are deeper, the base of the prothorax is more constricted and more rugose, the elytra shinier.

313 *Bembidion beesoni*, Andr

Bembidion beesoni: Andrewes, Ann Mag Nat Hist (10) xi, 1933, p 100, Netolitzky, Att Mus Civ. Trieste, xu, 1934, p. 89 (*bessonii* err. typ.).

Colour cupreous, underside, antennæ, and legs black, with metallic reflections

Head with rather shallow parallel furrows, extending on to clypeus, eyes only moderately prominent, genæ very short, antennæ short, submoniliform, surface coarsely striate-punctate at sides and behind, vertex finely rugose-punctate. *Prothorax* convex, nearly a fourth wider than head, and more than a half wider than long, base a little wider than apex, sides strongly rounded in front and slightly sinuate close to the hind angles, which are sharp though a little obtuse, without carina, median line fine, transverse impressions slight, basal foveæ deep, surface fairly closely rugose-punctate, more sparsely on disk, where it is also transversely striate. *Elytra* moderately convex, very little dilated behind, not

quite a half wider than prothorax, exactly a half longer than wide, shoulders square, the border rounding the shoulder and ending in a slight tooth above stria 5; lightly punctate-striate, the striae shallower towards apex, 8 deep behind, joining the marginal channel behind shoulder, 7 hardly shallower than the other striae, joining the deep apical stria behind; intervals nearly flat, 3 with two pores on the interval though near stria 3, and surrounded—especially the front one—by a depressed area covering two intervals (on the right elytron this area is much larger, on the left one the hind pore is missing), 8 subcostate along the outer side of the apical stria. Microsculpture isodiametric and distinct throughout. *Sternum*: episterna impunctate, metasternal process bordered

Length, 4 mm.

Distribution KASHMIR Khelanmarg, 11,000 feet, 28 v 1928 (C F C Beeson), Razhdhainangan, 12,000 feet (L Caporiacco).

Type in the British Museum

The species is allied to the palaeartic *B. bipunctatum* L., but it is smaller, has no carina in the hind angles of the prothorax, and the microsculpture of the elytra is much more distinct

Key to the cameroni-group

1 (2) Colour black with faint metallic reflections, head between foveæ with one or two fine punctures only, antennæ nearly reaching middle of elytra, elytral striae moderately deep, only disappearing (except 1) close to apex. Length 5-6 mm.

[p. 110.]

exaratum, Andr.

2 (1) Colour brassy, head between foveæ finely punctate and sometimes rugose, antennæ only reaching basal third of elytra, elytral striae rather shallow, especially at sides, disappearing (except 1) at apical fourth. Length 5-5.75 mm

[p. 111.]

cameroni, Andr.,

314 *Bembidion exaratum*, Andr.

Bembidium exaratum Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 81

Colour black, head and prothorax dark metallic green, elytra dark bluish-green, joint 1 of the antennæ, palpi, legs, and apical border of the elytra ferruginous, the rest of the antennæ brown

Head with deep, parallel furrows, diverging behind; eyes prominent; antennæ nearly reaching middle of elytra; surface shiny, with a few punctures along the inner margins of the foveæ. Prothorax convex, cordate, slightly wider than

head, a fifth wider than long, base wider than apex, sides rounded in front, sinuate before base, the hind angles right and very sharp, projecting a very little laterally, and with a well marked carina; median line fairly deep in front, deeper and wider behind, basal foveæ deep, adjoining the angles, the basal area depressed and coarsely punctate. *Elytra* moderately convex, with square shoulders, the sides only widening a little behind, nearly twice as wide as prothorax, a half longer than wide, border rounding the shoulder and reaching a point midway between striae 4 and 5, striae fairly deep and finely punctate, evanescent behind, but only disappearing close to apex, 1 continued to apex, 8 deep, joining marginal channel behind shoulder, 1-2 (which join), 5, and the fairly long scutellary striae all deeper close to base, apical stria obsolete, and the pore consequently isolated, intervals slightly convex, dorsal pores adjoining stria 3, surface smooth and shiny. No microsculpture. *Sternum* proepisterna with some coarse punctures, metasternal process unbordered. Ventral segments transversely sulcate.

Length, 5 5-6 mm

Distribution PUNJAB: Sirila Hills, Gahan, 7000 feet (*S N Chatterjee*), and Simla (*B N Chopra*); Spiti, Mankaran (*G Babault*) KASHMIR: Jhelum Valley, Buniyar, 5000 feet (*B M Bhatia*). UNITED PROVINCES: Chakrata, Chulli Khud, 8000 feet (*S N Chatterjee*), Muktesar, 7500 feet (*T B Fletcher*), West Almora (*H G Champion*). BENGAL: Ghum (*M Cameron*)

Type in my collection

315 *Bembidion cameroni*, Andr.

Bembidion cameroni Andrewes, Ent Month Mag. 1922, p. 177; id., Ent Month Mag 1928, p. 68

Colour brassy above, dark red-brown beneath; joints 1-2 of antennæ, with base of 3-4 (rest fuscous), palpi (penultimate joint fuscous at apex), and legs ferruginous

Head with deep, uneven, parallel furrows, diverging behind, eyes moderately prominent, antennæ thick, reaching basal third of elytra, middle of front punctate. *Prothorax* convex, cordate, a little wider than head, about a fourth wider than long, base slightly wider than apex, sides gently rounded in front and sinuate near base, the hind angles right and sharp but not projecting, with a distinct carina, median line deep, very deep and wide behind, the basal foveæ deep, the basal area depressed and very coarsely punctate. *Elytra* moderately convex, ovate, shoulders somewhat rounded, about three-fourths wider than prothorax and about three-fifths longer than wide, border rounding the shoulder and extending

inwards to stria 5, rather lightly punctate-striate, the striae shallower at sides, and obsolete behind from about apical fourth, stria 1 deep to apex, scutellary striole short, meeting 1-2, which join at base, in a deep angular depression on each side of scutellum, 8 deep behind, joining marginal channel behind shoulder, apical stria obsolete, the pore isolated; intervals nearly flat, 1 slightly raised, 3 with two pores, adjoining stria 3, the front one occupying most of the interval.

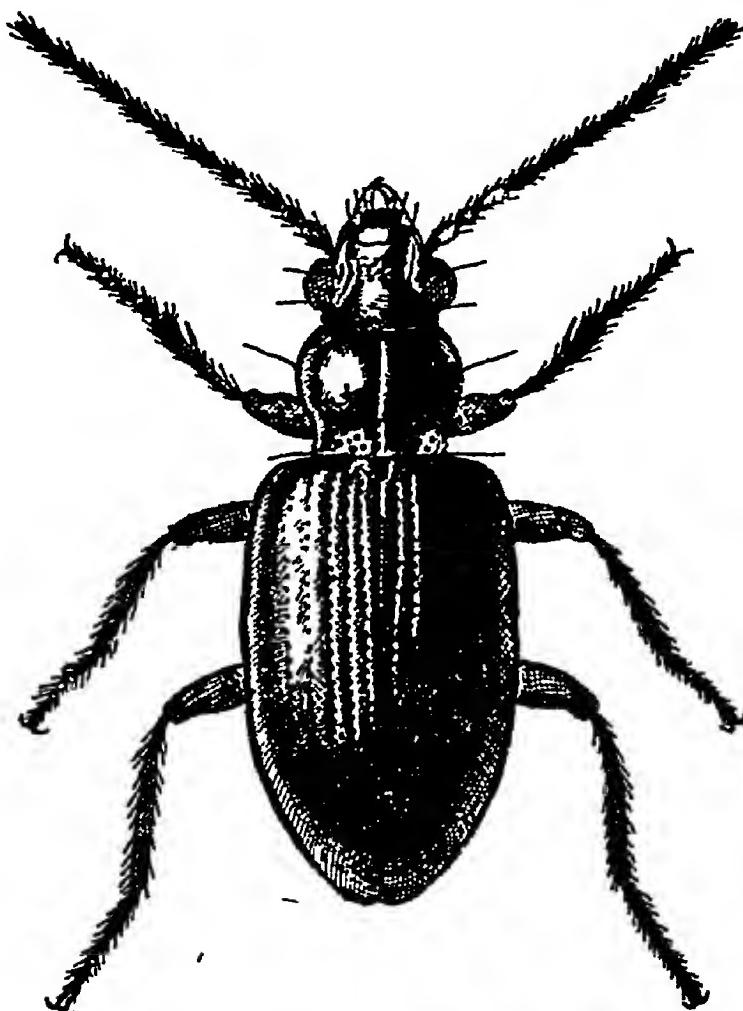


Fig 19.—*Bembidion cameroni* Andrewes.

the area surrounding it depressed Sternum proepisterna coarsely punctate, metasternal process unbordered Ventral segments transversely sulcate

Length, 5-5 75 mm

Distribution PUNJAB: Simla Hills, Gahan, 7000 feet (M. Cameron and S. N. Chatterjee), Kulu, Monah, 6000 feet (H. G. Champion). ASSAM: Manipur (Doherty). UNITED PROVINCES: Gori River Gorge (H. G. Champion). CHINA: Szechuen

Type in the British Museum

In the Chinese example, though the front and vertex are roughly sculptured, the puncturation of the head is very slight

Key to the kara-group

- 1 (2) Aeneous, dull, elytra with two dorsal pores, the striae lightly impressed, the microsculpture reticulate and very distinct Length 3.5-3.75 mm . . . *elatum*, Andr., p 113
- 2 (1) Blue-black, very shiny; elytra with three dorsal pores, the striae deep, the microsculpture formed by very fine transverse lines, visible only under the microscope Length 5-6.25 mm . . . *Kara*, Andr., p 114

316 *Bembidion elatum*, Andr

Bembidion elatum Andrewes, The Carabidae of the Third Mount Everest Expedition, 1924, Trans Ent Soc Lond. 1930, pp 3 and 12

Colour black, upper surface aeneous

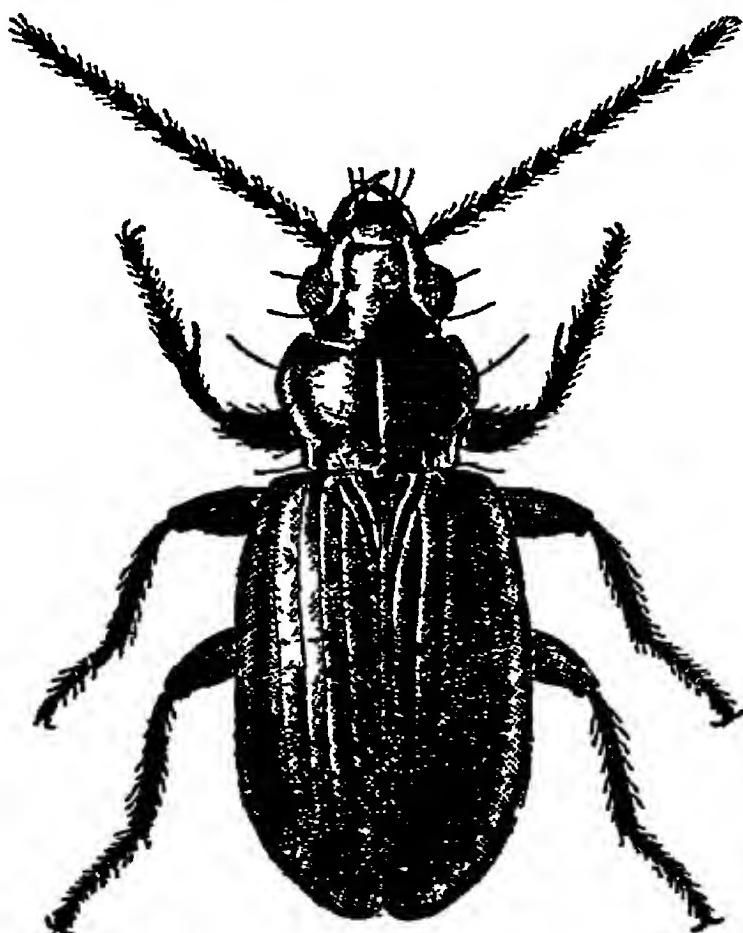


Fig. 20.—*Bembidion elatum* Andrewes

Head with short, moderately deep, parallel furrows, ending in two shallow rounded pores which lie between the front supraorbitals, eyes rather flat, antennæ not reaching far beyond base of elytra, surface impunctate. *Prothorax* subcordate, moderately convex, a fourth wider than head and a third wider than long, sides gently rounded in front and slightly sinuate before base, hind angles right, very sharp, not projecting laterally, with only a rudimentary carina, median line fine, front transverse impression obsolete, hind one moderately deep, basal foveæ fairly deep, a small deeper impression on each side just within the carina, surface vaguely striate, transversely on disk, longitudinally along middle of base. *Elytra* flat, subovate, with rather square shoulders, two-thirds wider than prothorax, a half longer than wide, sides gently rounded, border rounding shoulder to base of stria 5, lightly striate, the striae with fine vague punctures, outer striae somewhat fainter, 5 deeper close to base, 8 deep behind, joining marginal channel behind shoulder, where there are three or four large punctures, scutellary striole rather short, apical stria distinct, intervals nearly flat, 3 with two pores adjoining stria 3, at about a half and three-quarters. Microsculpture very distinct throughout, the meshes moderately transverse on the elytra, isodiametric on head and prothorax. Metasternal process narrowly and indistinctly bordered, ventral surface with some slight scattered pubescence.

Length, 3 5–3 75 mm

Distribution TIBET. Pangle, 15,500 feet, Tashidzom, 14,500 feet (R W G Hungston)

Type in the British Museum, co-type in my collection

There is no nearly allied Indian species

317 *Bembidion kara*, Andr. [Plate III, fig 6]

Bembidium Lara Andrewes, Ent Month Mag 1921, p 250, id., Ent Month Mag 1923, p 101.

Bembidion kara Jedlicka, Acta Soc ent Cech xxix 1932, p 47, id., Acta Soc ent Cech xxx, 1933, pp 3 and 8

Colour black, very shiny, head and prothorax with faint greenish reflections, elytra very dark blue, slightly iridescent, joint 1 of the antennæ ferruginous, rest of antennæ, palpi, and tarsi piceous

Head with deep, uneven, parallel furrows, eyes prominent, antennæ reaching basal fifth of elytra, surface smooth. *Prothorax* cordate, moderately convex, a little wider than head, a half wider than long, base wider than apex, sides rounded in front, and gently sinuate before base, hind angles slightly obtuse but very sharp, with only a rudimentary carina,

median line, hind transverse impression, and basal foveæ all moderately deep, lateral border continued inwards on each side as far as the foveæ, surface smooth, the basal area finely and rather vaguely rugose-punctate *Elytra* rather flat, the shoulders square, sides parallel, three-fifths wider than prothorax and as much longer than wide, border rounding the shoulder and extending inwards to stria 5, fairly deeply punctate-striate throughout, the punctures very fine and disappearing towards apex, scutellary striole long, apical stria deep, joining 5, inner intervals flat, outer ones a little convex, 3 dorsal pores, at a fourth, a half, and three-fourths respectively, adjoining stria 3 Microsculpture formed by very fine, closely placed, transverse lines, visible only under the microscope ($\times 80$) *Sternum*: metasternum with a few punctures in front and behind, sparsely pilose, metasternal process bordered at sides only. *Venter* sparsely pilose

Length, 5-6 25 mm

Distribution PUNJAB: Simla, Jubbul, Chepal, 7400 feet, and Patharnala, 8000 feet (both *B M Bhatia*) UNITED PROVINCES: Western and Central Almora, Swal River basin, Kosi River (Ranikhet division), 3000 feet, and Nandhaur River (Haldwani division) (all *H. G. Champion*); Dehra Dun (*M. Cameron* and *M. Bose*), River Song (*M. Cameron*), Khaurna, Siwalik Hills (*S. N. Chatterjee*) BENGAL: Namsoo, 2100 feet, and Gopaldhara, 4700 feet (*H. Stevens*) EASTERN DIARIES (*H. Stevens*) ASSAM: Garo Hills, Somesvari River (*S. W. Kemp* and *B. Chopra*), Naga Hills 4000 feet (*S. N. Chatterjee*). YUNNAN. TONG-KING. LAOS COCHIN-CHINA

Type in my collection.

This and two other species, *B. irregulare* Net. (described further on) and *B. tamra* Andr., from Yunnan, are remarkable in having three instead of the usual two dorsal pores on the elytra. *B. lara* has been taken in large numbers by Mr Stevens in Sikkim and by Mr Vitalis de Salvaza in Indo-China, so that it is apparently common at least in some of the localities it frequents

Key to the punctulipenne-group

- 1 (6) Prothorax a third wider than long
- 2 (3) Elytra rather strongly dilated behind, three fourths wider behind than at base, the striae on disk moderately impressed, the lines of minute punctures down the middle of the intervals clearly visible under a strong lens
- 3 (2) Elytra moderately dilated behind, a half wider than at base, the striae on disk lightly impressed, the lines of punctures along the intervals faint

[p. 116.
punctulipenne, Bates,

4 (5) Prothorax with its sides straight or even slightly rounded behind, basal area lightly rugose-punctate, elytral striae very lightly impressed, the rows of punctures on the intervals barely visible on apical half

[p 118]
bucephalum, Net,

5 (4) Prothorax with its sides faintly sinuate behind, basal area distinctly rugose-punctate, elytral striae fine but clearly impressed, the rows of fine punctures more or less visible throughout

[p 119.]
himalayanum, Andr.,

6 (1) Prothorax a half wider than long

7 (8) Colour a fairly bright saeneous, elytra flat, the striae lightly impressed, though the punctuation is quite distinct on the disk

[p 119.]
peirimagni, Net.,

8 (7) Colour black with a faint saeneous tinge, elytra moderately convex, the striae deep

kurrum, sp nov, p 120.

318 *Bembidion punctulipenne*, Bates

Bembidium punctulipenne Bates *, Proc. Zool. Soc 1878, p 718,
id, Scientific Results of the Second Yarkand Mission, 1891,
Col p 18

Bembidion platyppterum Netolitzky (not Solsky), Wien Ent. Zeit.
1910, p 48, id, Ent. Mitt 1920, p 112

Colour piceous, moderately shiny, upper surface saeneous. Head with short, but fairly deep, parallel furrows, eyes rather flat, antennæ reaching basal fourth of elytra; the surface with one or two punctures behind. Prothorax convex, subcordate, a fifth wider than head, fully a third wider than long, apex as wide as base, the sides of which are very oblique, sides rounded in front, straight behind hind angles very obtuse, reflexed, with a conspicuous pore on the angle, a rudimentary carina close to the margin, median line fairly deep at middle, basal foveæ small but deep, bounded outwardly on each side by an oblique convex fold, directed from the angle towards the centre, basal area depressed, irregularly but mainly longitudinally rugose-striate, with some vague punctuation, some vague punctures and striae along sides and front transverse impression, and some slight transverse striation on disk. Elytra flat, ovate, a half wider than prothorax, three-quarters longer than wide, width behind middle three-fourths greater than at shoulders, border reaching stria 5, dorsal striae clearly impressed and finely punctate, I fairly deep to apex, the rest shallower at sides and behind, but visible throughout, scutellary striae short, apical stria deep, intervals slightly convex on disk only, dorsal pores small but distinct, a somewhat irregular row of small punctures running down the centre of each interval. Microsculpture

of the elytra fairly distinct, formed by very wide meshes, that of prothorax just visible; on the head some isodiametric meshes can be seen on the neck.

Length, 3.6 mm.

Distribution PAMIR (?) (*F. Stoliczka*) Bates writes. "No locality Most probably the Pamir"

Type in the Indian Museum, Calcutta

So far as I am aware the type is unique, and the species may not occur in the Indian region at all, but as the specimen was most likely taken in the Pamir I have thought it best to introduce it here

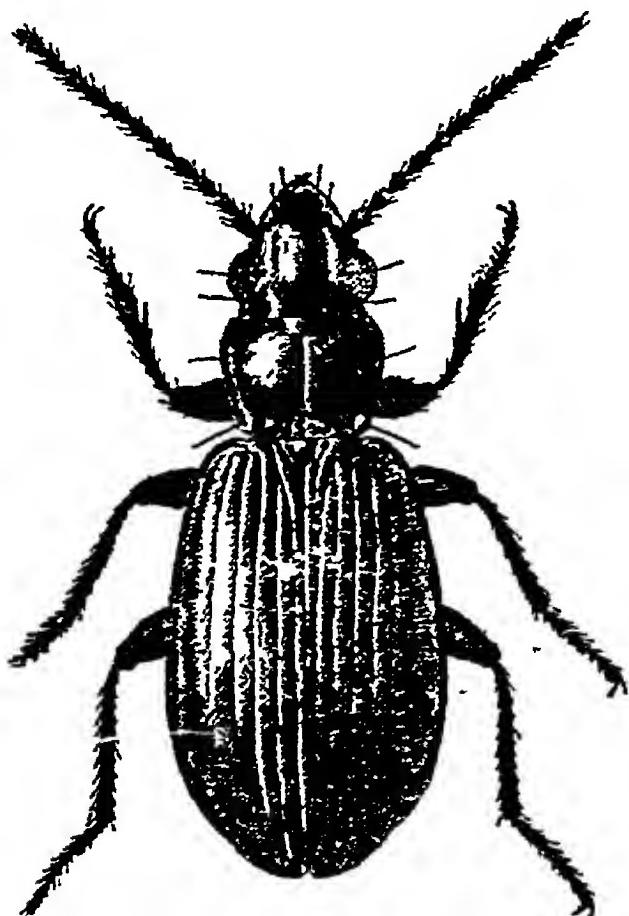


Fig. 21.—*Bembidion punctulipenne* Bates

In 1910 Dr Netolitzky thought it probable that Bates's species was identical with *B. platypterus* Solsky from Central Asia, and in 1920 this seems to be assumed as a fact, this synonymy has been taken for granted in the catalogues published since that date, including my own. On coming to compare the type of *punctulipenne* with an example of *platypterus* I find wide discrepancies. In the former species,

described above, though the surface is duller and rougher, the æneous tint is a brighter one, the eyes are flatter, the margins of the prothorax, and especially the base, are much more rugose, the elytra are narrowed at base and dilated behind, so that the width behind is three-fourths greater than at shoulders, compared with about a half in *platypterus*, the striæ are somewhat deeper, the microsculpture more evident, and the surface less shiny, while the punctures running down the middle of the intervals are larger

319 *Bembidion bucephalum*, Net

Bembidion bucephalum Netolitzky, Ent. Mitt. ix, 1920, pp 63 and 114, id., Att. Mus. Civ. Trieste, xii, 1934, p 99

Colour black, upper surface dark æneous, shiny

Head with short, moderately deep, parallel furrows, eyes not prominent, antennæ reaching basal fourth of elytra, surface with a few wrinkles at sides behind. Prothorax convex, subcordate, about a fifth wider than head, a third wider than long, base slightly narrower than apex, its sides oblique, sides rounded in front, nearly straight behind, the hind angles projecting on each side as a small, sharp, slightly obtuse tooth, with a slight carina adjoining the margin, median line fairly deep at middle, hind transverse impression very deep, continued at sides by the basal foveæ, basal area somewhat rugose, with a few punctures, disk with a little transverse striation. Elytra rather flat, subovate, with square shoulders, two-fifths wider than prothorax, three-fifths longer than wide, widest behind middle, basal border reaching stria 5, striæ lightly impressed, finely and indistinctly punctate, 1 moderately deep on apical half, 2 and 5 deep close to apex, scutellary striole distinct, apical stria fairly deep, intervals nearly flat, dorsal pores adjoining stria 3, a poorly developed irregular row of minute pores running down the middle of each interval, hardly visible except close to base. Microsculpture of the elytra distinct, formed by very wide meshes, wanting on the disk of prothorax and very indistinct on the head.

Length, 3 5-4 mm

Distribution KASHMIR Chhota Deosai, 13,000 feet, Indus Valley, Boorgi Nala, 12,000 feet, Braldo Valley, Kro Brok, 12,400 feet, and Thla Brok, 14,000 feet, Punmah Valley, Dumultar, 14,000 feet, Baltoro, Urdukas, 13,400 feet, Mundu, 14,400 feet, and Lopsang-Bransa, 15,000 feet (all L Capriacco)

TURKESTAN BOKHARA TRANSCASPIA

Type in Dr Netolitzky's collection

320 *Bembidion himalayanum*, Andr.

Bembidion himalayanum Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 74, id, Ent Month Mag 1926, p 67.

Colour black, shiny, upper surface dark bronze.

The species is very closely allied to *bucephalum*. The head is similar. In the prothorax the sides are faintly sinuate before the base, the hind angles sharp though obtuse and not projecting on each side as a small tooth, a raised area sometimes present on each side between the angle and the fovea, the basal area more evidently, sometimes densely, rugose-punctate, occasionally with some longitudinal striation. The elytra are flatter, more evidently dilated behind, the shoulders more nearly rectangular, the striae, though still lightly impressed, are deeper, and the punctures within them more evident, the row of fine points down the middle of each interval visible under a magnifying-glass even on the apical half. Microsculpture similar.

Length, 4-4.5 mm

Distribution NORTH-WEST FRONTIER PROVINCE: Kurram Valley, Parachinar (F. W. Champion). PUNJAB: Lahul, Patseo (G. Babault), Kangra, Baijnath, 3300 feet, Dharm-sala, Triun, 9300 feet; Seraj, Jalori Pass, 10,800 feet (all H. G. Champion). TIBET: Supi River (H. G. Champion).

Type in the British Museum

321 *Bembidion petrimagni*, Net

Bembidion petrimagni Netolitzky, Ent Mitt 1920, p 113; id., Att Mus Civ. Trieste, xii, 1934, p 99

I have in my collection one example of this species named by the author. This is a little larger than *bucephalum*, but similarly coloured. The head is similar. Prothorax a half wider than long, its sides straight behind, the hind angles sharp and almost rectangular, with a more rudimentary carina, the basal area very finely and much more distinctly rugose, the rough surface extending forward along the marginal channel to beyond middle. The elytra are flatter but otherwise nearly similar, the dorsal striae a little more impressed and the scutellary striae longer, the lines of fine punctures along the intervals very difficult to see. There is very little to distinguish either this species or *bucephalum* from the Central Asian *platypterus* Solsky.

Length, 4-5 mm

Distribution KASHMIR: Deosai, Lal Pani, 13,300 feet, and Baltoro, Urdukas, 14,200 feet (L Caporiacco). PAMIR: Peter I Mountain.

Type in Dr Netolitzky's collection

322 *Bembidion kurram*, sp nov.

Colour black, with a faint æneous tinge, visible chiefly on head and prothorax, surface shiny

Head with rather deep, subrugose, parallel furrows, extending to clypeus; eyes moderately prominent, antennæ stout, reaching basal fourth of prothorax; surface with one or two very fine punctures on each side of vertex. *Prothorax* moderately convex, subquadrate, a fourth wider than head, a half wider than long, base with its sides rather oblique, just wider than apex, sides rounded in front and then straight, but slightly sinuate immediately before base, hind angles a little obtuse but sharp, with a small carina; median line fine, front transverse impression shallow, finely rugose, hind one a little deeper, basal foveæ fairly deep, the basal area rather vaguely rugose-punctate. *Elytra* moderately convex, a little dilated behind, separately rounded at apex, a half wider than prothorax and also a half longer than wide, shoulders square, the border rounding the shoulder and terminating opposite stria 5, rather deeply punctate-striate, the striæ entire but a little shallower, including 2, towards apex and at sides, 8 deep behind, joining the marginal channel behind shoulder, apical stria and scutellary striole both well developed; intervals moderately convex, with an irregular line of minute punctures down the middle of each, 3 with two fairly large pores adjoining stria 3, a costa between apical stria and margin. The microsculpture of the elytra is faint, reticulate, the meshes wide and a little oblique, very faint on the prothorax. *Sternum*: metasternal process with a very well defined border.

Length, 4.5 mm

Distribution NORTH-WEST FRONTIER PROVINCE: Kurram Valley, Parachinar (*F. W. Champion*)

Type in the British Museum The type is unique.

Key to the nivicola-group

1 (4) Colour æneous; microsculpture of the elytra formed by isodiametric meshes
Length 5-5.5 mm.

2 (3) Elytra often with blue or green reflections, antennæ and legs black; sides of both prothorax and elytra gently rounded, base of prothorax strigose, elytra flat Length 5 mm

3 (2) Elytra sometimes with blue reflections in the marginal channel, joint 1 of antennæ and legs dark ferruginous, sides of both prothorax and elytra fairly strongly rounded, base of prothorax only vaguely striate, elytra moderately convex Length 5-5.5 mm

nivicola, Andr., p. 121.

[p 122.
hingstoni, Andr.,

- 4 (1) Colour dark bronze or black with metallic reflections; microsculpture of the elytra formed by meshes which are evidently wider than long Length 5.5-7 mm.
- 5 (6) Elytra dark bronze, antennæ very long, nearly reaching middle of elytra, prothorax with a raised area within the hind angles Length 6-7 mm [p 123
persephone, Andr,
- 6 (5) Elytra usually black, with metallic (generally blue) reflections, but occasionally bronze; antennæ reaching basal third of elytra, prothorax without any raised area within the hind angles Length 5.5-6 mm pluto, Andr , p. 123

323 *Bembidion nivicola*, Andr

Bembidion nivicola Andrewes, Ann. Mag. Nat. Hist. (9) xi, 1923, p 275.

Bembidion nivicola Andrewes, Trans Ent Soc Lond. 1930, p 3; Jedlicka, Acta Soc ent. Cech. xxx, 1933, pp 2 and 6; Netolitzky in Visser, Karakorum i, 1935, p 274

Colour black, shiny, with metallic reflections; upper surface of a deep faintly bluish-green, sometimes dark æneous, trochanters red

Head with fairly deep, short, uneven, parallel furrows; eyes rather flat; antennæ stout, reaching basal fourth of elytra, surface impunctate Prothorax cordate, rather flat, a fourth wider than head, nearly a third wider than long, base a little wider than apex, sides gently rounded and sinuate at a fourth from base, hind angles right, very sharp, with a short carina and a longitudinal impression just within it; median line rather fine, not reaching extremities, basal foveæ fairly deep, surface smooth, the basal area depressed, and finely striate-rugose Elytra flat, about a half wider than prothorax and as much longer than wide, shoulders square, a little dilated behind and widest at apical third, border rounding shoulder and reaching stria 5; striae shallow, feebly punctate, much fainter at sides, but the inner striae are no shallower near apex, where 1 and 2 join, 8 deep behind, joining the marginal channel behind shoulder, scutellary striae short and slight, apical stria deep, joining sometimes 5, sometimes 7; intervals nearly flat, the dorsal pores small but clear, adjoining stria 3 Microsculpture practically isodiametric, the meshes being barely wider than long, distinct on the elytra, fainter on the disk of the prothorax, and very faint on the head Metasternal process finely bordered at sides

Length, 4.5-5.5 mm.

Distribution KASHMIR: Daulad Beguldi (near the Karakorum Pass), 16,500 feet (*J. A. Sillem*). TIBET: Mount Everest Base Camp, Rombuk, 16,500 feet (*T. G. Longstaff* and *R. W. G. Hingston*), Tasam, Rongshar Valley, 12,500 feet (*R. W. G. Hingston*)

Type in the British Museum

324 *Bembidion hingstoni*, Andr.

Bembidion hingstoni Andrewes, The Carabidæ of the Third Mount Everest Expedition, 1924, Trans Ent Soc Lond 1930, pp 3 and 11.

Colour black, upper surface æneous - joint 1 of antennæ and legs ferruginous, femora sometimes piceous

Head with short, fairly deep, parallel furrows, eyes rather flat; antennæ reaching basal fourth of elytra, surface impunctate. Prothorax slightly convex, cordate, a fifth wider than head and fully a third wider than long, sides well rounded in front, sinuate at a fourth from base, hind angles right, sharp, not projecting laterally, with a more or less distinct carina; transverse impressions and the median line between them all well marked, though not deep, basal foveæ short but deep surface smooth, base usually more or less vaguely striate, with some microscopic punctures, visible chiefly on the basal area. Elytra moderately convex, subovate, though with square shoulders, rather more than a half wider than prothorax and as much longer than wide, sides well rounded, the widest part behind middle, border rounding shoulder but barely reaching base of stria 5; striae generally moderately impressed, very finely and indistinctly punctate, the outer a little shallower than the inner ones, 2 a little deeper close to base, scutellary striae rather short, apical stria short but distinct; intervals slightly convex on disk, flat at sides, 3 with two pores adjoining stria 3, at about a third and two-thirds respectively. The microsculpture of the elytra is very distinct and is formed by isodiametric meshes; on the disk of the prothorax the meshes are faint and tend to become a little wider than long; head with isodiametric meshes, obsolete on vertex. Metasternal process narrowly bordered at sides.

Length, 5-5 5 mm

Distribution TIBET: Kampa Dzong, Tinki Dzong, Trangso Chumbab, Kyishong, Pangle, Pang La, Lamna La (all *R. W. G. Hingston*)

Type in the British Museum

The species is rather a variable one, especially in the depth of the elytral striae, the width of the prothorax at base, the development of the angular carina, etc

325 *Bembidion persephone*, Andr.

Bembidium persephone Andrewes, Ent. Month Mag. 1926, pp 67 and 72

Colour pieceous; upper surface dull bronze, tibiae dark red.

Head with fairly deep, short, wide, parallel furrows, extending to sides of clypeus, neck wide, eyes rather flat, antennae thick, almost reaching middle of elytra, surface impunctate. Prothorax cordate, rather flat, a third wider than head and as much wider than long, extremities equally contracted, apex slightly emarginate and bordered close to the angles, sides gently rounded and sinuate at a fourth from base, hind angles sharp and rectangular, with a short carina, median line rather deep, not nearly reaching extremities, foveæ wide and not very deep, surface smooth, basal area irregularly rugose-striate. Elytra flat, a little depressed on front of disk, two-thirds wider than prothorax, a half longer than wide, shoulders very square, gently dilated behind and widest at apical third, border rounding shoulder and reaching stria 5, striæ shallow, finely punctate, only a little shallower at sides and behind, 2 equally impressed throughout, joining 1 at apex, 8 deep behind, joining marginal channel behind shoulder, scutellary striole moderately long, apical stria fairly deep, joining 7, intervals nearly flat, 3 with two well marked pores, at a third and three-fourths respectively, adjoining stria 3, surface smooth. Microsculpture reticulate, distinct, though lightly impressed, the meshes barely wider than long on prothorax and elytra, isodiametric but very faint on the head. Metasternal process depressed across the middle, distinctly bordered at sides but not at apex.

Length, 6-7 mm

Distribution UNITED PROVINCES. Kumaon, Shelshel, 15,750 feet (H G Champion)

Type in the British Museum, co-types in Mr Champion's and in my collection

326 *Bembidion pluto*, Andr. [Plate IV, fig 1]

Bembidium pluto Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 72, t 1, f 3, id., Ent Month Mag 1926, p 67, id., Mem Conn Acad x, 1934, p 24

Colour black, with blue or green reflections, more rarely bronze joint 1 of the antennæ beneath, tibiae and tarsi more or less brown, the legs sometimes entirely dark red.

Head with fairly deep, uneven, parallel furrows, neck wide, eyes rather flat, antennæ thick, reaching basal third of clypeus, surface impunctate, vaguely striate at sides. Prothorax cordate, rather flat, a fourth wider than head, a third

wider than long, base very slightly wider than apex, sides rounded in front and sinuate a little before base, hind angles right, sharp, with a slight carina, median line and transverse impressions all moderately deep, basal foveæ rounded, fairly deep, basal area finely striate-rugose, surface otherwise smooth *Elytra* flat, with square shoulders, somewhat dilated behind and widest at about apical third, fully a half wider than prothorax, three-fifths longer than wide, border rounding shoulder to base of stria 5, striae shallow, finely punctate, not much shallower behind, though faint at sides, 2 equally impressed throughout, joining 1 at apex, 8 deep behind, joining marginal channel a long way behind shoulder, scutellary striae moderately long, apical stria deep, joining 7; intervals nearly flat, dorsal pores rather large, adjoining stria 3, at a third and three-fourths respectively, surface smooth Microsculpture reticulate, very distinct on the elytra, the meshes barely wider than long, rather faint on disk of the prothorax, isodiametric but indistinct on head Metasternal process depressed across middle, bordered at sides

Length, 5 5-6 mm

Distribution KASHMIR Nima-Mud, Tsho-Marari, and Salt Lake (all in Rupshu), Leh (all *G. Babault*), Tangyar, 14,300 feet, Lukung, 14,000 feet, and Igu, 12,000 feet (all *G. E. Hutchinson*) UNITED PROVINCES Sagcha, Laptel, and Shelshel (all in Kumaon, *H. G. Champion*)

Type in my collection

Key to the kaschmirensse-group

- 1 (20) Prothorax of normal form, i.e., with the base more or less truncate, its sides sometimes directed obliquely forward
- 2 (17) Large species of 5-8 mm in length, colour blue or blue-black, the elytral striae clearly punctate at least on basal half.
- 3 (12) Joint 1 of the antennæ black or piceous, at least on upper surface, elytra evidently dilated behind and pointed at apex, colour blue-black or very dark blue
- 4 (9) Prothorax with the sides of the base oblique, so that the hind angles, though sharp, are either obtuse or project laterally
- 5 (8) Prothorax with the carinæ in the hind angles only moderately developed, converging a little forwards, middle of base almost impunctate, colour dark blue
- 6 (7) Eyes moderately prominent, frontal foveæ irregular, antennæ reaching middle of elytra, elytra shiny, outer striae distinct behind .

- 7 (6) Eyes rather flat, frontal suture smooth, antennae reaching basal fourth of elytra, elytra subscutaceous, outer striae very faint behind *leander*, sp nov., p 127
- 8 (5) Prothorax with the carinae in the hind angles strongly developed, diverging a little forwards, middle of base finely punctate, colour blue black, the head and prothorax generally greenish
- 9 (4) Prothorax with its base truncate though produced slightly at middle, the hind angles sharply rectangular, sometimes projecting a little either laterally or backwards
- 10 (11) Elytral striae 3 and 4 joining behind and disappearing at some distance from apex, usually with a boss immediately behind their termination; colour blue black, sometimes with a faint greenish tinge Length 5-6 mm
- 11 (10) Elytral striae 3 and 4 continued to near apex, without boss, colour dark blue Length 5-5.5 mm
- 12 (3) Joint I of the antennae reddish; elytra very little dilated behind and rounded at apex, colour blue or bright blue
- 13 (14) Head with rather smooth, shallow frontal suture, distant from each other, prothorax with the front angles rounded away, the base hardly wider than the apex, the carinae in the hind angles well developed, colour bright blue. Length 7.5-8 mm
- 14 (13) Head with fairly deep irregular frontal suture, near together, with a very convex space between them, prothorax with the front angles evident though rounded, the base wider than apex, the carinae in the hind angles rather slight, colour blue
- 15 (16) Prothorax about a fourth wider than long, outer elytral striae almost obliterated near apex Length 5-6 mm
- 16 (15) Prothorax about a third wider than long; outer elytral striae shallow, but quite distinct near apex Length 7.5-8 mm
- 17 (2) Small species of 4.5-5.5 mm in length; colour very dark blue, with or without greenish reflections, elytral striae as a rule less distinctly punctate, even on basal half
- sp 128
cimmerium, Andr.,
- orinum*, Andr., p 129
- regale, Andr., p 129.
- [p 130
Laschmirense, Net.,
- dux*, sp nov., p 130.

- 18 (19) Hind angles of prothorax sharply rectangular, with a well developed carina, elytra strongly dilated behind and pointed at apex, upper surface with greenish reflections Length 4 5-5 5 mm .. *livens*, Andr , p 131
- 19 (18) Hind angles of prothorax obtuse, with only a slight carina, elytra slightly dilated behind and rounded at apex, upper surface without greenish reflections Length 4 5-5 mm *atrox*, sp nov , p 132
- 20 (1) Prothorax abnormal, the base truncate at middle, with a semicircular emargination on each side, beyond which the hind angles project for some distance backwards *aymonis*, Net , p 132

327 *Bembidion aquilum*, Andr

Bembidium aquilum Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, par Guy Babault, Carabidæ, 1924, p 76, Netolitzky, Att. Mus Civ Trieste, XII, 1934, p 90

Colour black, shiny, upper surface dark blue, with faint greenish reflections, apical border of elytra narrowly red, joint 1 of antennæ piceous, sometimes red

Head with deep, uneven, parallel furrows, eyes moderately prominent, antennæ nearly reaching middle of elytra, surface smooth, with one or two fine punctures at sides behind. Prothorax cordate, convex, about a fourth wider than head and barely a third wider than long, base with its sides oblique, a little wider than apex, sides rounded sinuate a little before base, hind angles sharp, very slightly obtuse, not projecting laterally, with a distinct carina, median line and hind transverse impression moderately deep, basal foveæ fairly deep, the basal area rather finely rugose-punctate. Elytra rather flat, ovate, somewhat pointed at apex, two-thirds wider than prothorax, not quite a half longer than wide, widest a little behind middle, sides well rounded, border rounding shoulder and reaching the base of stria 5, punctate-striate, the striae fairly deep throughout except that the outer, especially 7, are a little less impressed than the inner ones, 8 deep behind, joining the lateral channel behind shoulder, scutellary striole short, apical stria deep, joining 5, intervals convex, dorsal pores very distinct, adjoining stria 3. Microsculpture reticulate, formed by moderately wide meshes, rather faint even on the elytra, still fainter on the disk of prothorax and on head. Metasternal process bordered

Length, 6-6 25 mm

Distribution PUNJAB Lahul, Patseo (G Babault) KASHMIR Gund, Baltal Mulbeck, Leh (all G Babault), Gulmarg (M Cameron), Skardu (L Caporacco)

Type in my collection

The figure published with the description of this species (plate 1 fig. 6) actually represents *B. orinum* Andr.

328. *Bembidion leander*, sp. nov.

Colour black, moderately shiny, upper surface blue, the elytra vaguely sericeous; apical border of elytra and underside of joint 1 of antennæ red, apex of femora, middle of tibiae, and tarsi dull red or piceous.

Head with moderately deep, parallel, furrows, diverging a little behind; eyes not very prominent; antennæ stout, reaching basal fourth of elytra; surface impunctate. Prothorax moderately convex, cordate, a fourth wider than head and as much wider than long, base a little wider than apex, its sides oblique, sides rounded in front and gently sinuate near hind angles, which are sharp though slightly obtuse, with a fine carina, median line fine, hind transverse impression and basal fossæ moderately deep, basal area rather vaguely rugose-punctate. Elytra rather flat, ovate, two-thirds wider than prothorax, and as much longer than wide, shoulders square, apex somewhat pointed, border reaching stria 5; rather lightly punctate-striate, the outer striae much shallower than the inner ones, 7 obsolete, 8 deep behind, joining the marginal channel in front, 3 joining 4 not far from apex, apical stria and scutellary striole both present, the latter very short; intervals slightly convex, dorsal pores adjoining stria 3. Microsculpture reticulate, the meshes moderately wide on the prothorax and elytra, practically isodiametric on the head. Sternum: metasternal process bordered

Length, 5.5-6 mm.

Distribution PUNJAB. Simla Hills, Kotkhai, 5500 feet, 10 v 1924 (C F C. Beeson)

Type in the British Museum, co-types in the Forest Research Institute, Dehra Dun, and in my collection

329 *Bembidion satanas*, Andr.

Bembidium satanas Andrewes, Ent Month Mag 1924, p 193; Notolitzky, Att Mus Civ Trieste, xii, 1934, p 90

This species seems to be hardly more than a local race of *B. aquilum*, but it is not only a little larger but the elytra are of a deep blue-black tint. The head and prothorax are almost exactly similar, but the latter is wider, nearly a half wider than long, the elytra are a little more dilated behind, the striae appear wider and the intervals rather more convex, the outer striae are noticeably less impressed, and 7 in particular is quite rudimentary. The specimens from the various

localities are not all quite alike, but do not appear to constitute more than one species

Length, 6 5-7 mm

Distribution NORTH-WEST FRONTIER PROVINCE Chitral, Rambur Valley, Chimiksan stream (*B N Chopra*) KASHMIR. Goorais Valley, 7000 feet (*J H Leech*) ; Gulmarg, 8500 feet (*M Cameron*) ; Lidar Valley, Lidarwat, 9000 feet (*S C Ansorge*) , Sind Valley, Gagandiyeh, 8500 feet (*E C Ansorge*), and Gund, 7000 feet (*L Caporacco*), Kolahoi, 11,000 feet (*E C Ansorge*)

Type in my collection

330 *Bembidion cimmerium*, Andr.

Bembidium cimmerium Andrewes, Ent Month Mag 1922, p. 238.

Colour dark blue-black, shiny, upper surface generally with a faint greenish tinge, joint 1 of antennæ and legs more or less piceous

Head as in *aquilum*, but the frontal furrows are a little longer and deeper and the surface is a little striate near the eyes behind. *Prothorax* cordate, moderately convex, a fourth wider than head, fully a third wider than long, sides of base straight, sides well rounded and sinuate a little before base, hind angles sharply rectangular, with a distinct carina, median line strongly impressed at middle, hind transverse impression and basal foveæ deep, a few punctures in or near the foveæ, uneven along base, elsewhere vaguely striate. *Elytra* moderately convex, ovate, shoulders square, a half wider than prothorax, three-fifths longer than wide, the border reaching a point opposite stria 5, where it ends in a minute tooth, striae entire, deep, finely punctate, the outer ones a little less deeply impressed, striae 1-2 joining both at base and apex, 3-4 joining and disappearing a long way from apex, 5-7 terminating at about the same level, but 5 joins the deep apical stria, scutellary striae short but deep, intervals convex on disk, rather flatter towards sides and apex, two large pores on stria 3, at or just before middle and at three-fourths respectively, the smooth area on each side behind stria 3-4 occupied by a raised knob. Microsculpture of the elytra formed by meshes two to three times wider than long; obsolete on the head and disk of prothorax. *Metasternal process* bordered

Length, 5 5-6 mm

Distribution PUNJAB Simla Hills, Matiana, 8000 feet (*S. W Kemp*), and Gahan, 7000 feet (*S N Chatterjee*) UNITED PROVINCES Chakrata division, Challi Khud, 8000 feet (*S N Chatterjee*)

Type in the British Museum

331 *Bembidion orinum*, Andr [Plate IV, fig. 4]

Bembidium cimmerium var *orinum* Andrewes, Ent Month Mag 1922, p 239; id, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, par Guy Babault, Carabidae, 1924, t 1 f 6 (as *B aquilum* Andr); id, Ent Month Mag 1926, p 67

Very near *cimmerium*, though on average very slightly smaller, the upper surface with a bluish instead of a greenish tinge. The head is slightly narrower and the eyes a little flatter. On the prothorax the transverse basal sulcus and the foveæ are both shallower. The shoulders of the elytra are more rounded, the striæ hardly as deep on the disk but a little deeper near apex, the outer striæ near base almost as deep as the inner ones, 3 to 4 continued to nearer apex and without any knob behind their termination.

Length, 5 5-6 mm

Distribution PUNJAB Kulu, Parbatti Valley, 6000-8000 feet (H. G Champion). UNITED PROVINCES: West Almora, Sunderdhunga Valley, 8000-12,000 feet; Gori Valley, Gori River Gorge, 5000-9000 feet, and Burphu, 11,500 feet, taken in shingle at the edge of the Gori River (all H. G Champion).

Type in the British Museum

332 *Bembidion regale*, Andr. [Plate III, fig. 8]

Bembidium regale Andrewes, Ent Month Mag 1922, p 174; id, Ent. Month Mag 1926, p 67.

Colour black, upper surface bright blue, with faint green reflections or patches, joint 1 of antennæ ferruginous, tarsi piceous. Surface very shiny.

Head with moderately deep, parallel furrows, extending on to clypeus, eyes only moderately prominent; antennæ reaching basal fourth of elytra, a small depression on vertex, one or two minute punctures at sides. Prothorax cordate, moderately convex, about a fifth wider than head and rather more than a fourth wider than long, base as wide as apex, its sides a little oblique, the median part somewhat produced, sides rounded, sinuate near base, hind angles sharp though slightly obtuse, projecting a little laterally, with a well-marked carina, median line fine, basal sulcus moderately deep, foveæ deep, with a short oblique impressed line at the bottom of each, basal area finely but not closely punctate, one or two punctures near front margin. Elytra rather flat, ovate but with square shoulders, not quite twice as wide as prothorax, two-thirds longer than wide, not much dilated behind, border rounding shoulder and terminating in a small tooth midway between striæ 4 and 5, striæ fairly deep on

disk and very clearly punctate, evanescent towards sides and apex, but 2 is only slightly shallower just before apex, 7 very faint, apical stria and scutellary striole moderately developed, intervals moderately convex on disk, two large dorsal pores adjoining stria 3 Microsculpture of the elytra formed by meshes which are a little wider than long, practically none on head and prothorax Metasternal process conspicuously bordered

Length, 6.5–8.5 mm

Distribution PUNJAB Dharamsala UNITED PROVINCES: Tanakpur, Haldwani, Sarda River Gorge, Gori River Gorge, Chilla (Ganges River) (all *H G Champion*)

Type in the British Museum

333 *Bembidion kaschmirensis*, Net

Bembidion kaschmirensis Netolitzky *, Ent Mitt 1920, p. 117

Very closely allied to *regale*, but much smaller, similar in colour, but the legs and antennæ are piceous, the second joint of the latter sometimes ferruginous as well as the first On the head the frontal furrows are deeper and more uneven, the space between them narrower and more convex, the antennæ more slender The base of the prothorax is straight, hardly oblique at sides or produced at middle, the basal area even more indistinctly punctate The elytra differ only in having more coarsely punctate striae and rather more conspicuous dorsal pores The microsculpture is similar

Length, 5–6 mm

Distribution BASHAHR Poo

Type in Dr F Netolitzky's collection, a co-type in my collection

334 *Bembidion dux*, sp nov

This species is very nearly allied to *regale*, but differs in the following particulars —The elytra are of a darker tint of blue, joint 1 of the antennæ, tibiae, tarsi, and the apical border of the elytra light red On the head the frontal furrows are deeper and the vertex is smooth and impunctate The prothorax is a little wider, in both species the central part of the base is slightly produced, but here the sides are not oblique, so that the angles, which project a little laterally, are slightly acute and very sharp, the basal area is only vaguely punctate In the elytra the border hardly extends beyond stria 5, the striation is similar, but the puncturation of the striae is finer and less conspicuous, being hardly visible behind middle

Length, 7.5–8 mm

Distribution PUNJAB: Kulu, Parbatti Valley, 6000-8000 feet (*H. G. Champion*) *UNITED PROVINCES*. Kumaon, Gori River Gorge, 5000-9000 feet (*H. G. Champion*)

Type in the British Museum, co-types in Mr Champion's collection and in my collection

335. *Bembidion livens*, Andr.

Bembidion licens Andrewes, The Carabidae of the Third Mount Everest Expedition, 1924, Trans Ent Soc Lond. 1930, pp 3 and 11; id., Mem Conn Acad x, 1934, p 24

Colour black, upper surface very dark blue, with some metallic green reflections.

Head with deep, parallel, uneven furrows, extending on to clypeus, eyes not prominent, antennæ nearly reaching middle of elytra; surface smooth, but with a few punctures on each side of vertex. *Prothorax* moderately convex, cordate, a fourth wider than head and fully a third wider than long, sides well rounded in front and rather strongly sinuate at basal fourth, hind angles right, sharp, but hardly projecting laterally, with a well-marked carina; median line fairly deep, front transverse impression obsolete except at middle, hind one vague, basal foveæ deep, somewhat removed from hind angles, disk smooth, basal area uneven and with traces of fine puncturation, some transverse striæ in front of the foveæ, some longitudinal striæ at middle. *Elytra* moderately convex, ovate, rather pointed at apex, shoulders well marked, two-thirds wider than prothorax, about a half longer than wide, sides strongly rounded, the widest part a little behind middle, the border rounding the shoulder and barely reaching base of stria 5, punctate-striate, the punctures not very clearly defined, the striæ fairly deep on disk, rather shallow at sides, but all distinct, scutellary striole and apical stria both fairly developed, intervals a little convex on disk, flat at sides, 3 with two pores adjoining stria 3, just before middle and at two-thirds respectively. The microsculpture of the elytra and prothorax is formed by moderately transverse meshes, very faint on disk of prothorax; on the head the meshes are isodiametric. *Venter* glabrous, metasternal process bordered at sides only.

Length, 4.5-5 mm

Distribution TIBET: Yatang, 10,000 feet, Tropde, 12,000 feet (*R. W. G. Hingston*). *KASHMIR*: Khalatse (?) and Himis (*G. E. Hutchinson*).

Type in the British Museum

An example from Sikkim (Tangu, 14,000 feet) is apparently a variety of this species, but as it seems to be somewhat deformed I refrain from giving it a name.

336. *Bembidion atrox*, sp nov.

Colour black, upper surface blue-black, shiny, palpi, joint 1 of antennæ, tibiae, and tarsi piceous

Head with moderately deep parallel furrows, eyes rather flat, antennæ nearly reaching middle of elytra, surface impunctate. *Prothorax* convex, cordate, a fourth wider than head, about a third wider than long, base very little wider than apex, its sides oblique, sides rather gently rounded in front and gently sinuate near base, the hind angles sharp but very slightly obtuse, not projecting laterally, with rather a slight carina, median line at middle and hind transverse impression moderately deep, basal foveæ deep, basal area finely and inconspicuously punctate. *Elytra* rather flat, ovate, two-thirds wider than prothorax, a half longer than wide, shoulders square, border reaching stria 5, rather finely punctate-striate, the puncturation feeble, the striae hardly shallower behind, though evidently shallower at sides, 3 and 4 joining behind not far from apex, 7 barely visible, 8 deep behind, joining marginal channel behind shoulder, apical stria and scutellary striole both present, intervals slightly convex, dorsal pores rather far back, adjoining stria 3. Microsculpture very distinct throughout, formed by a reticulation of moderately wide meshes on the prothorax and elytra, by isodiametric meshes on the head. *Sternum* metasternal process bordered

Length, 4.5–5 mm

Distribution UNITED PROVINCES (*H G Champion*).

Type in the British Museum

Among the blue-black species, with dark antennæ and legs, this is the smallest yet discovered in the Himalayas. In two of the four specimens found by Mr Champion the elytra are a little more finely striate than in the other two, one of which I have made the type

337 *Bembidion ajmonis*, Net

Bembidion ajmonis Netolitzky *, Att Mus Civ. Trieste, xii, 1934,
p 95, t xi

Colour of the upper surface very dark metallic green, palpi, antennæ, and legs piceous, but the base of the antennæ, tibiae, and tarsi are a little lighter

Head with short, deep, parallel furrows, each containing a few coarse punctures, a small pore on the vertex, and a few punctures at sides behind, eyes rather flat, antennæ reaching basal fourth of the elytra. *Prothorax* convex, about a fourth wider than head and as much wider than long, base about a fifth wider than apex, sides with a very distinct border and channel, extending from the front to the hind angle, very gently rounded in front and barely sinuate behind, base

truncate at middle but with a semicircular emargination on each side, the hind angles projecting backwards, obliquely truncate at their extremities, and each with a well marked carina; median line moderately deep, front transverse impression very slight, hind one deeper, basal foveæ deep, surface finely though sparsely punctate at sides and in front, the base a little more closely, with punctures of unequal size, middle of disk smooth. *Elytra* convex, ovate, rather more than two-thirds wider than prothorax, about a half longer than wide, border reaching a point opposite stria 6, where it forms a minute tooth, base produced on each side so as to-



Fig 22.—*Bembidion aymonis* Netolitzky.

form an angle opposite the emargination in the base of the prothorax; punctate-striate, striae 1 to 4 fairly deep throughout, 5 and 6 shallower, 7 very shallow, scutellary striae and apical stria both moderately deep; intervals convex, 3 with two pores adjoining stria 3. Microsculpture wanting on the elytra (δ) and only just traceable on the prothorax. Metasternal process bordered, prosternum with a few punctures.

Length, 5.5 mm (4.5 in the original description)

Distribution KASHMIR. Razdhainangan, 11,500 feet
(*L. Caporiacco*)

Type in the Milan Civic Museum

Only one ♂ specimen is known.

Dr. Netolitzky has made for this curious species the sub-genus *Thaumaloperyphus*

Key to the eutherum-group

- 1 (12) Elytra with rounded sides, striæ 3 to 7 evanescent at sides and apex, micro-sculpture reticulate
- 2 (9) Microsculpture of the elytra formed by meshes which are either isodiametric or only a little wider than long. Elytra rather flat, with gently rounded sides and distinct shoulders, the striæ on disk moderately impressed. Length 6-8 mm.
- 3 (8) Head with some striation at sides, upper surface piceous or dark green, legs ferruginous
- 4 (7) Elytra with two dorsal pores, the meshes of the microsculpture a little wider than long
- 5 (6) Head very distinctly striate at sides, prothorax about a third wider than long; elytra subovate, the shoulders moderately rounded; upper surface piceous, the elytra faintly iridescent
- 6 (5) Head lightly striate at sides, prothorax about a fourth wider than long; elytra subovate, the shoulders rather square, upper surface dark green
- 7 (4) Elytra with three dorsal pores, meshes of the microsculpture isodiametric; head striate in the furrows
- 8 (3) Head without striation at sides; upper surface a fairly bright blue, legs flavous
- 9 (2) Microsculpture of the elytra formed by very wide meshes. Elytra more or less convex, the striæ on disk fairly deep. Length about 5 mm
- 10 (11) Elytra convex, with strongly rounded sides, the shoulders practically rounded away, the striæ on disk deep, head with one or two fine punctures only at sides; elytra black
- 11 (10) Elytra moderately convex, with gently rounded sides, the shoulders visible though rounded, the striæ on disk moderately deep, head finely punctate, both at sides and on disk; elytra green
- 12 (1) Elytra with parallel sides, the striæ entire, only a little fainter at sides and apex; microsculpture formed by very fine transverse lines, elytra deep blue, very shiny, legs flavous. Length about 5 mm.

limatum, Andr., p 135

leve, Andr., p 135.

irregularis, Net., p 136

[p 137.
ochropus, sp nov.,

[p 138
holconotum, sp nov.,

[p 138
hasurada, Andr.,

[p 139.
eutherum, Andr.,

338 *Bembidion limatum*, Andr.

Bembidion limatum Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p. 77.

Colour piceous, the elytra iridescent, joints 1 and 2 of antennæ, apex of elytra, and legs dark ferruginous; penultimate joint of the maxillary palpi fuscous

Head with fairly deep parallel furrows, deeper behind; eyes only moderately prominent, antennæ reaching middle of elytra; surface impunctate, obliquely striate on each side behind the front supraorbital pore. Prothorax convex, cordate, about a third wider than head and as much wider than long, base truncate, hardly wider than apex, sides strongly rounded, sinuate a little before base, hind angles right, very sharp, projecting a little laterally, and with a rudimentary carina, median line fairly deep on disk, front transverse impression distinct though shallow, hind one and basal foveæ deep, basal area depressed and uneven, with a few large but vague punctures. Elytra flat, suboval, two-thirds wider than prothorax and a half longer than wide, separately rounded at extremities, border rounding shoulder and reaching stria 5, crenulate-striate, with some punctures in the striae near scutellum, the striae moderately deep on disk, evanescent at sides and towards apex, 1 deep throughout, 2 a little shallower near apex, 7 formed by fine punctures only, apical stria and scutellary striae both fairly developed, intervals moderately convex on disk, dorsal pores adjoining stria 3. Microsculpture reticulate, rather faint, formed on the elytra by meshes barely wider than long, obsolete on disk of prothorax and head. Metasternal process bordered.

Length, 7 mm

Distribution PUNJAB. Bajaurz, Kangra district (G. Babault)

Type in my collection, this is a ♀ specimen and the only one at present known

339 *Bembidion leve*, Andr.

Bembidion leve Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p. 78

Colour black, upper surface dark blue or green; joint 1 of the antennæ, apex of elytra, and legs ferruginous; penultimate joint of the maxillary palpi fuscous

Head with fairly deep parallel furrows, eyes only moderately prominent, antennæ reaching basal third of elytra; surface impunctate, very faintly obliquely striate on each

side behind. *Prothorax* convex, cordate, hardly more than a fourth wider than head, a fifth wider than long, base wider than apex, slightly arcuate, so that its sides are a little oblique, sides gently rounded, sinuate a little before base, hind angles right, sharp, projecting a little laterally, and with a slight carina, median line and basal foveæ fairly deep, basal area depressed, moderately rugose-punctate. *Elytra* rather flat, subovate, two-thirds wider than prothorax, not quite three-fifths longer than wide, shoulders rather square, border rounding shoulder and reaching stria 5, punctate-striate, the striæ moderately deep on disk, more lightly impressed at sides and near apex, 1 deep throughout, 2 very little shallower near apex, scutellary striole well developed, apical stria very deep, intervals moderately convex on disk, dorsal pores adjoining stria 3. Microsculpture reticulate, the meshes on the elytra hardly wider than long, obsolete on head and disk of prothorax. Metasternal process bordered

Length, 6-6.5 mm

Distribution KASHMIR Ladak Mulbeck (*G. Babault*)

Type in my collection

340 *Bembidion irregulare*, Net

Bembidion irregulare Netolitzky, Att Mus Civ Trieste, XII, 1934,
p 90

Colour piceous, head and prothorax dull metallic green, elytra brown with greenish reflections, joints 1 to 3 of the antennæ, tibiæ, and tarsi ferruginous, rest of antennæ and femora brown, penultimate joint of palpi fuscous

Head with moderately deep, very wide, parallel furrows, some slight longitudinal striation at the bottom of each, eyes not prominent, antennæ reaching basal third of elytra, surface smooth and impunctate. *Prothorax* moderately convex, subcordate, a little wider than head and also a little wider than long, base slightly arcuate, as wide as apex, sides very narrowly bordered, rounded in front, sinuate at a fifth from base, hind angles right, sharp, with a short fine carina, median line impressed at middle, front transverse impression slight, but the disk is transversely impressed behind it, the hind impression and the small rounded foveæ moderately deep, basal area longitudinally rugose-striate, but impunctate, surface generally vaguely cross-striate. *Elytra* rather flat, with very distinct shoulders, twice as wide as prothorax, a half longer than wide, border rounding shoulder and reaching the middle of interval 5, lightly punctate-striate, the punctures very fine, the inner striæ only impressed, 1 moderately impressed throughout, 2 a little shallower behind but quite distinct up to apex, 7 hardly visible, apical stria and scutellary

striole present though not much developed, intervals nearly flat, three dorsal pores adjoining stria 3, at about two-fifths, three-fifths, and five-sixths Microsculpture distinct, the meshes on the elytra isodiametric, somewhat transverse on the prothorax, and covering the whole area Metasternal process bordered.

Length, 6 mm.

Distribution KASHMIR: Gund, 8000 feet, Shaksgan Valley (Tarim basin), between 13,000 and 15,000 feet (*L Caporiacco*).

Type in the Civic Museum, Milan

The very unusual character presented by the three dorsal pores seems to show a relationship with *B. lara*, but in other respects the two species are not very closely allied

341, *Bembidion ochropus*, sp nov

Colour piceous beneath, rather bright blue above; joints 1 and 2 of antennae and legs flavous, rest of antennae and penultimate joint of palpi brown in the type, fuscous in the co-type, middle of venter and apical border of elytra dull red.

Head with fairly deep, uneven, parallel furrows; eyes moderately prominent, antennae long and slender, reaching middle of elytra, surface impunctate Prothorax moderately convex, cordate, a fourth wider than head and a little more than a fourth wider than long, base evidently wider than apex, sides well rounded in front and sinuate at quite a fifth from base, hind angles sharply rectangular, with a slight carina, median line fine, front transverse impression obsolete, though traces of puncturation are visible, hind impression and basal forevee both deep, basal area vaguely rugose-punctate. Elytra somewhat flat, oval, nearly three-quarters wider than prothorax, rather more than a half longer than wide, shoulders a little rounded, though evident, border reaching stria 5; moderately punctate-striate, the stria nowhere deep and evanescent at sides and towards apex, 1 continued to apex, 2 visible though no deeper at apex, 3 bending outwards behind and (in the type) continued to the apical pore, 7 barely visible, 8 deep behind, joining the marginal channel behind shoulder, scutellary striole and apical stria both present; intervals a little convex on disk only, dorsal pores adjoining stria 3 Microsculpture of the elytra formed by slightly transverse meshes, none visible on disk of prothorax Sternum: metasternal process bordered

Length, 7 5-8 mm

Distribution BASHAHR - Poo

Type in my collection; co-type in Dr G Hauser's collection

342. *Bembidion holeonotum*, sp. nov.

Colour black, head and prothorax with faint greenish reflections, joints 1 to 3 of antennæ, palpi, and legs pale ferruginous

Head with fairly deep, uneven, parallel furrows, extending to clypeus, eyes moderately prominent, antennæ stout, reaching basal third of prothorax, vertex vaguely rugose, its sides with one or two punctures. *Prothorax* convex, cordate, a little less than a fourth wider than head, a little more than a fourth wider than long, apex as wide as base, sides rounded in front, sinuate near base, the hind angles sharply rectangular, with a well-developed carina, median line fine, front transverse impression slight, with a few vague punctures, basal foveæ deep, the basal area finely punctate. *Elytra* convex, ovate, pointed at apex and with well rounded sides, four-fifths wider than prothorax, a little more than a third longer than wide, border rounding shoulder and reaching a point opposite stria 5, deeply punctate striae, the striae entire, though somewhat shallower at sides and apex, 2 deep to apex, 8 deep behind, joining the marginal channel behind shoulder, apical stria and scutellary striole both well developed, intervals convex on disk, flatter at sides, two dorsal pores adjoining stria 3. The microsculpture is reticulate, the meshes wide and a little indistinct. *Sternum* metasternal process bordered

Length, 5 mm.

Distribution. KASHMIR Batote, 7 v 1928 (*C F C Beeson*)
UNITED PROVINCES : Mussooree, Childers Lodge, 7500 feet

Type in my collection, co-type in the Forest Research Institute, Dehra Dun

343 *Bembidion hasurada*, Andr.

Bembidion hasurada Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 77

Bembidion hasurada Jedlicka, Acta Soc ent Čech xxx, 1933, pp 2, 4, and 10, Netolitzky, Att Mus Civ Trieste, xii, 1934, p 93

Colour black, upper surface a fairly bright green or, more rarely, blue, palpi, joints 1 to 3 of antennæ, and legs pale ferruginous

Head with deep, uneven, parallel furrows, eyes not prominent, antennæ reaching basal third of elytra, sides of vertex punctate, the punctures, though small, being larger and more numerous than in the allied species. *Prothorax* cordate, moderately convex, a fourth wider than head and a fifth wider than long, base a little wider than apex, its sides only slightly oblique, sides rounded and sinuate just before base,

hind angles right, sharp, and projecting a little laterally, with a slight carina; median line moderately impressed, confined to disk, basal foveæ fairly deep, basal area depressed, surface lightly transversely striate, the base finely rugose-punctate. *Elytra* moderately convex, ovate, about a half wider than prothorax, two-thirds longer than wide, the border rounding the shoulder and reaching stria 5, punctate-striate, fairly deeply on disk, moderately at sides and behind, striae 1 and 2 deep to apex, where they meet, joining the striole at base and deeply impressed at that point, apical stria deep; intervals moderately convex, at least on disk, dorsal pores fairly conspicuous. The microsculpture of the elytra is formed by very wide meshes, but on the head and disk of prothorax it is obsolete. Metasternal process bordered.

Length, 5-5.5 mm

Distribution KASHMIR. Mulbeck (*G. Babault*), Batote (*C F. C Beeson*), Chenab Valley, Raman (*B M Bhatia*); Gulmarg, 8500 feet, and Aphar Wat, 13,000 feet (*M Cameron*); Kangan (*L Caporacco*). PUNJAB. Spiti, Pulga (*G. Babault*); Simla Hills, Matiana, 8000 feet (*S IV Kemp*), and Kotgarh, 7000 feet (*S N. Chatterjee*), Kulu, Naggar (*H G Champion*). BASHAHR: Poo UNITED PROVINCES. West Almora and Naini-Tal (*H G. Champion*), Chakrata, Binal Gad, 7000-8000 feet, and Bodyar, 8300 feet (*S N. Chatterjee*), Mussooree, Childers Lodge, 7500 feet

Type in my collection

344 *Bembidion eutherum*, Andr

Bembidium eutherum Andrewes, Ent Month Mag. 1923, p 96

Bembidion eutherum Jedlicka, Acta Soc ent Cech xxx, 1933, pp. 2 and 9

Colour black, shiny, upper surface very dark blue, palpi (penultimate joint fuscous), joints 1 and 2 of antennæ, with basal half of 3 and 4, apical border of elytra, apical half of femora, tibiae, and tarsi flavous

Head with moderately deep parallel furrows, eyes fairly prominent, antennæ slender, not quite reaching basal third of elytra, surface impunctate. Prothorax convex, cordate, a fourth wider than head and a little more than a fourth wider than long, base truncate, rather wider than apex, sides rounded, sinuate close to base, the hind angles right, sharp, and furnished with a short carina, median line fine, basal foveæ fairly deep, basal area somewhat depressed, finely and rather sparsely punctate. Elytra ovate, convex, quite three-fifths wider than prothorax, a half longer than wide, shoulders square, sides parallel at middle, border rounding

shoulder and reaching stria 5, striae entire, fairly deep, very clearly punctate on basal half, the punctures smaller, but the striae very little shallower either at sides or near apex, 1 and 2 deep throughout, scutellary striole rather long, apical striole deep, joining 7, intervals moderately convex, dorsal pores adjoining stria 3 Microsculpture of the elytra formed by very fine transverse lines, visible only under a high power ($\times 80$), invisible on disk of prothorax Metasternal process

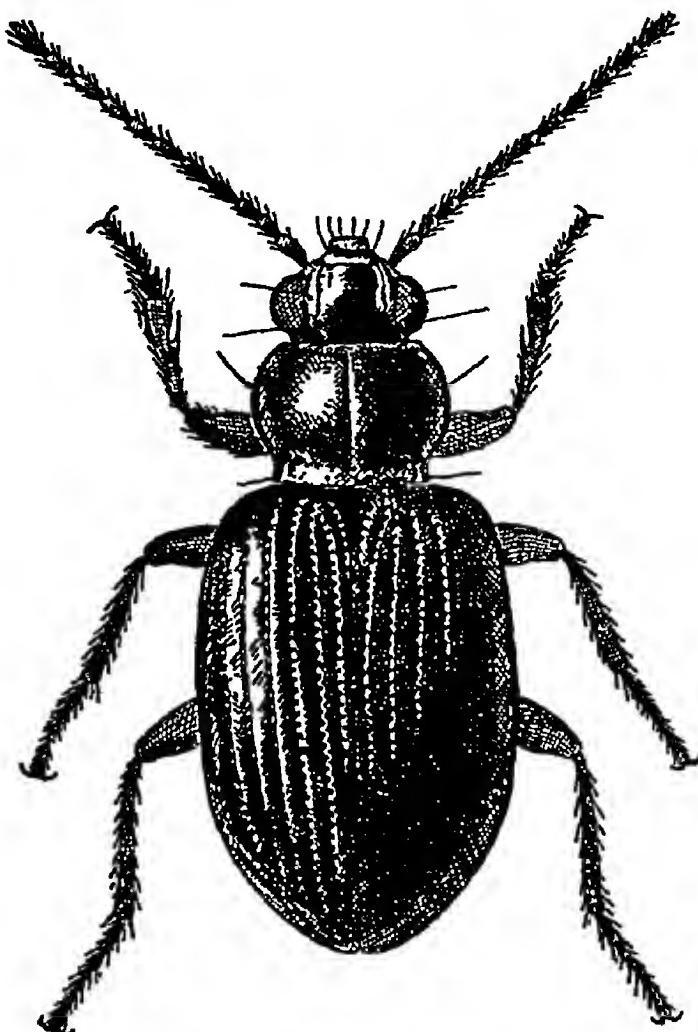


Fig 23 - *Bembidion eutherum* Andrewes

bordered, metepisterna elongate, very strongly bordered at sides

Length, 4.5-5 mm

Distribution PUNJAB Simla Hill States, Matiana (*S. W. Kemp*), Kangra, Shahpur, 4000 feet (*H. G. Champion*) UNITED PROVINCES Naini-Tal, Jalaban, Dehra Dun and Mussooree, Mossy Falls and Kemti Falls (*M. Cameron*), West Almora, Sarda River Gorge, Tanakpur, Ranikhet,

Haldwani, Chilla (Ganges River), and Hardwar (Ganges River) (all *H. G. Champion*) ; Chakrata division, Chulli Khud, 8000 feet (*S. N. Chatterjee*) EASTERN DUARS (*H. Stevens*). SIKKIM : Tista Valley, Gielle Khola (*H. Stevens*) ASSAM : Pasighat and Kobo, bank of Dihong River (*S. W. Kemp*) ; Naga Hills, 4000 feet (*S. N. Chatterjee*)

Type in my collection

Very rarely specimens are met with which have a small reddish spot near the apex of each elytron

Key to the braminum-group

- | | |
|---|------------------------------------|
| 1 (2) Elytra bronze, dull, with a microsculpture of transverse lines, striae very lightly impressed, evanescent from middle, dorsal pores large and conspicuous Length 4-5 mm | [p 141
<i>braminum</i> , Andr , |
| 2 (1) Elytra dark teneous, very shiny, without microsculpture, striae moderately impressed, evanescent from three-fourths, dorsal pores small. Length 3.5-4.5 mm | <i>gagates</i> , Andr , p 142 |

345 *Bembidion braminum*, Andr.

Bembidium braminum Andrewes, Ann Mag Nat Hist (9) xii, 1923, p 442

Colour black, upper surface dark bronze, palpi and legs more or less piceous, joint 1 of antennae beneath, with base of joints 2 to 4, and apex of elytra reddish

Head with deep, parallel, rather uneven furrows, diverging behind, eyes moderately prominent; antennae reaching basal third of elytra; a few punctures on each side of vertex and some vague cross-striation in front. Prothorax convex, cordate, a fifth wider than head, about a third wider than long, base slightly wider than apex, its sides a little oblique, sides rounded, faintly sinuate behind, hind angles a little obtuse but sharp, with a slight carina; median line and basal foveæ moderately deep, basal area somewhat depressed, moderately rugose-punctate. Elytra convex, ovate, three-fifths wider than prothorax and two-fifths longer than wide, shoulders a little rounded, border reaching stria 5, finely punctate-striate, the striae obsolete at sides and on apical third, 1 fairly deep on apical half, 2 visible throughout and a little deeper close to apex, scutellary stria short, apical stria fairly deep; intervals flat, 1 very narrow and convex towards apex, dorsal pores conspicuous, adjoining stria 3, surface glossy. Micro-sculpture of the elytra reticulate, the meshes very wide, obsolete on disk of prothorax and head. Metasternal process bordered

Length, 4-5 mm.

Distribution MADRAS. Palni Hills, Kodaikanal, 6700-7200 feet, on shores of lake and banks of pool (S. W. Kemp)

Type in the Indian Museum, Calcutta; co-types in my collection.

346 *Bembidion gagates*, Andr. [Plate IV, fig 2]

Bembidium gagates Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab. 1924, p 72, t 1, f 4

Bembidion gagates Jedlicka, Acta Soc ent Čech xxx, 1933, pp 4 and 10; Netolitzky, Att Mus Civ Trieste, xii, 1934, p 96; id, in Visser, Karakorum, 1, 1935, p 274

Colour black, very shiny, upper surface dark æneous, tarsi more or less piceous

Head with moderately deep uneven furrows, diverging a little behind, eyes moderately prominent; antennæ nearly reaching middle of elytra; surface impunctate. *Prothorax* convex, cordate, a fourth wider than head and about a third wider than long, base faintly arcuate, slightly wider than apex, sides rounded, sinuate close to the base, hind angles sharp, very slightly obtuse, with a distinct carina, median line very fine, hind transverse impression and basal foveæ fairly deep, base finely punctate. *Elytra* convex, oval, but with rather square shoulders, a half wider than prothorax and quite three-fifths longer than wide, border rounding shoulder and reaching stria 5, striæ rather lightly impressed but very clearly punctate, finer at sides and obsolete towards apex, 1 moderately deep and 2 visible throughout, 7 just visible, scutellary striole and apical stria both present, but rather shallow, intervals nearly flat, 1 narrowed and raised behind, dorsal pores small, adjoining stria 3. Surface generally smooth and polished, without microsculpture. Metasternal process bordered

Length, 3 75-4·25 mm

Distribution. NORTH-WEST INDIA. The species is common throughout the Western Himalayas up to 10,000 feet, but it has not yet been found east of Kumaon

Type in my collection

346 a *Bembidion gagates* var. *sindicum*, Netolitzky.

Bembidion gagates sindicum Netolitzky, nov. subsp., Att Mus Civ. Trieste, xii, 1934, p 97; id, in Visser, Karakorum, 1, 1935, p. 275

The variety differs only from the type-form in having a small pale spot towards the apex of each elytron

Key to the bracculatum-group

- 1 (12) Elytral striae 2 visible throughout, lightly impressed before, but sometimes fairly deep at apex, apical stria well developed
- 2 (9) Head with at least one or two punctures on disk or at sides
- 3 (6) Narrow, rather slender species, the elytra more or less oval, without microsculpture
- 4 (5) Eyes moderately prominent, elytra suboval, though the shoulders are quite visible, striae distinctly punctate, elytra blue, femora ferruginous
- 5 (4) Eyes flat, elytra oval, the shoulders rounded away, striae indistinctly punctate, elytra darkaceous, femora mainly piceous
- 6 (3) Wide, stoutly built species, the elytra ovate, with evident shoulders, a microsculpture present
- 7 (8) Prothorax rather strongly narrowed behind, the base finely and sparsely punctate, hardly wider than apex, elytra blue, a little dull, femora flavous
- 8 (7) Prothorax not much narrowed behind, the base closely and distinctly punctate, evidently wider than apex, elytra blue-black, very shiny, basal half of femora piceous
- 9 (2) Head impunctate
- 10 (11) Prothorax two-fifths wider than long, upper surface dark, faintly bluish-green, legs ferruginous, with the basal two-thirds of femora piceous, microsculpture formed by meshes not much wider than long Length over 5 mm
- 11 (10) Prothorax only a fourth wider than long, upper surface blue, legs mainly brown or piceous, microsculpture formed by very wide meshes Length under 5 mm
- 12 (1) Elytral striae 2 disappearing before, though just visible close to, apex, apical stria slight, containing, but hardly extending beyond, the pore Colour blue black
- 13 (14) Femora ferruginous, elytra with rather gently rounded sides, the punctures forming the striae on apical fourth barely visible
- 14 (13) Femora with the basal two-thirds piceous, elytra with distinctly rounded sides, the punctures forming the striae on apical fourth fine but quite evident
- [p 144
lycander, sp. nov.]
- [p 144
psilax, sp. nov., p. 144.]
- [p 145
surdum, sp. nov.]
- [p 146
phaedrum, Andr.]
- [p 146
bracculatum, Bates]
- [p 148
belegara, Andr., p. 148.]
- [p 149
xestum Andr., p. 149]
- [p 149.
menander, sp. nov.]

347 *Bembidion lysander*, sp nov.

Colour black, upper surface blue, shiny, palpi, joints 1 and 2 of antennæ, with the base of 3 and 4, legs, and apical border of elytra ferruginous

Head with fairly deep, rather smooth furrows, diverging behind, eyes moderately prominent; surface with one or two minute punctures at sides of vertex. *Prothorax* convex, cordate, about a third wider than head, nearly a half wider than long, base as wide as apex, its sides a little oblique, sides rounded in front, sinuate just before base, hind angles sharply rectangular, with a short carina, median line rather short, but moderately deep, basal foveæ fairly deep, the basal area depressed and finely, though not closely, punctate. *Elytra* convex, suboval, three-fifths wider than prothorax, a half longer than wide, shoulders rather square, border reaching base of stria 5, punctate-striate, but only the inner striae impressed, the outer ones formed by the punctures, which are nearly as large as those of the inner striae at base, but tend to disappear after middle, I moderately deep to apex, the other inner striae much shallower, though reaching, or nearly reaching, apex, 8 deep behind, joining the marginal channel behind shoulder, apical stria and scutellary striae both present, sutural interval somewhat raised, the others only slightly convex, 3 with the two pores adjoining stria 3. No visible microsculpture. *Sternum* metasternal process bordered

Length, 4.5 mm

Distribution PUNJAB Murree Hills, Thobba (*Howland Roberts*)

Type in the British Museum. This specimen, which is unique, is slightly damaged, but all necessary characters are clearly visible

348 *Bembidion psilax*, sp nov.

Colour piceous, upper surface dark æneous, with a greenish tinge, joints 1 and 2 of antennæ, with the basal half of 3 and 4, apex of femora, tibiæ, and tarsi ferruginous

Head with fairly deep parallel furrows, eyes rather flat, antennæ reaching basal third of elytra, surface with one or two minute punctures on each side behind. *Prothorax* convex, cordate, a fifth wider than head, a third wider than long, base truncate, as wide as apex, sides gently rounded in front, sharply sinuate at a fifth from base, the hind angles sharply rectangular, with a well-marked carina; median line rather fine, basal foveæ fairly deep, the basal area somewhat depressed, both it and the front margin with some fine sparse puncturation. *Elytra* convex, oval, the shoulders rounded away, the

sides rather strongly rounded, a little more than a half wider than prothorax, a third longer than wide, border reaching base of stria 5, punctate-striate, the punctures small and not very clearly impressed, the striae moderately deep on disk, evanescent at sides and apex, 1 deep throughout, 2 visible throughout, very shallow before, but deeper again at apex, 7 very faint, scutellary striole and apical stria both short but moderately deep, intervals fairly convex on disk, dorsal pores very clear, adjoining stria 3 Microsculpture obsolete. Metasternal process finely bordered.

Length, 3 5 mm

Distribution UNITED PROVINCES: Chakrata, Konam, 7850 feet, and Mundali, 8400 feet (*J. C. M. Gardner*).

Type in the British Museum

349 *Bembidion surdum*, sp nov

Colour black beneath, upper surface blue; joints 1 to 3 of the antennae, with base of joint 4, and legs flavous, penultimate joint of palpi a little infuscate

Head with moderately deep parallel furrows, which are finely and sparsely punctate, the punctures extending a little beyond them behind, eyes moderately prominent; antennae barely reaching basal fourth of elytra. *Prothorax* convex, cordate, a third wider than head, two-fifths wider than long, base slightly arcuate, barely wider than apex, sides moderately rounded in front, gently sinuate before base, the hind angles sharp though a little obtuse each with a fine slight carina; median line deep and wide, not nearly reaching extremities, basal foveæ small but fairly deep, a little removed on each side from the angles, basal area a little depressed, finely and not very closely punctate, surface otherwise impunctate. *Elytra* moderately convex, ovate, but with the shoulders, though rounded, quite distinct, a little more than a half wider than prothorax and as much longer than wide, border reaching stria 5; fully punctate-striate, 1 deep throughout, 2 very shallow before, but deeper close to apex, the dorsal striae moderately deep, the outer striae rather shallower at sides, and all (except 1) a good deal shallower behind, though visible throughout, scutellary striole slight, apical stria well developed; intervals fairly convex on disk, dorsal pores well marked, adjoining stria 3 Microsculpture of the elytra formed by a reticulation of very wide meshes; obsolete on the head and disk of prothorax. Metasternal process bordered.

Length, 4 25 mm

Distribution KASHMIR: Batote (*C. F. C. Beeson*). UNITED PROVINCES: Chakrata, Konam, 7850 feet (*J. C. M. Gardner*).

Type in the British Museum

350. *Bembidion phædrum*, Andr

Bembidion phædrum Andrewes, Ent Month Mag 1923, p 97

Bembidion purkynii Jedlicka *, Acta Soc ent Čech xxix, 1932, p 38.

Bembidion phædrum Jedlicka, Acta Soc ent Čech. xxx, 1933, pp. 4 and 11.

Colour black, shiny; upper surface dark blue, sometimes with greenish reflections, joint 1 of antennæ, with base of joints 2 and 3, apical border of elytra, apex of femora, tibiae, and tarsi dark red

Head with deep parallel furrows, extending to clypeus, eyes moderately prominent, antennæ slender, reaching a little beyond basal third of elytra, a few scattered punctures on front and vertex. Prothorax convex, cordate, about a third wider than head and as much wider than long, base truncate, evidently wider than apex, sides rounded in front and sinuate a little before base, hind angles right and sharp, with a well marked carina, median line fine and short, transverse impressions slight, basal foveæ fairly deep, base rather closely punctate, a few punctures near front margin. Elytra convex, ovate, two-thirds wider than prothorax, not quite a half longer than wide, shoulders square, apex a little pointed, border extending inwards to stria 5, striæ moderately impressed and finely punctate, 1 deep throughout, 3 to 7 evanescent behind, 2 shallower but distinct to apex, scutellary striole rather long, apical stria short but fairly deep, intervals a little convex, at least on disk, dorsal pores adjoining stria 3. Microsculpture on the elytra formed by extremely fine transverse lines, a little less closely placed and more easily seen on the prothorax, on the head some isodiametric meshes are visible at sides only

Length, 5-5.5 mm

Distribution UNITED PROVINCES · Central and West Almora, West Bhatkot, 4000 feet, Swal River Basin, and Ranikhet, Garhwal, Siuni Gad, 4000 feet (all H G Champion) PUNJAB Simla Hills, Asni (B N. Chopra) CHINA . Szechuen

Type in the British Museum

351. *Bembidion bracculatum*, Bates

Bembidion bracculatum Bates *, Proc Zool Soc Lond. 1889, p. 212; Andrewes, Ent Month Mag. 1924, p 194, id, Ent Month Mag 1926, p. 67

Bembidion bracculatum Andrewes, Mem Conn Acad x, 1934, p 24 (?); Netolitzky, in Visser, Karakorum, i, 1935, p 274

Colour black, upper surface dark, faintly bluish-green, joints 1 to 3 of antennæ, apex of femora, tibiae, tarsi, and apical border of elytra pale ferruginous, rest of antennæ and femora,

and penultimate joint of palpi fuscous; shoulders of elytra hardly perceptibly tinged with red.

Head with moderately deep, uneven, parallel furrows, eyes not prominent, antennæ slender, reaching basal third of elytra; surface impunctate. *Prothorax* moderately convex, cordate, rather more than a fourth wider than head, two-fifths wider than long, base barely wider than apex, its sides

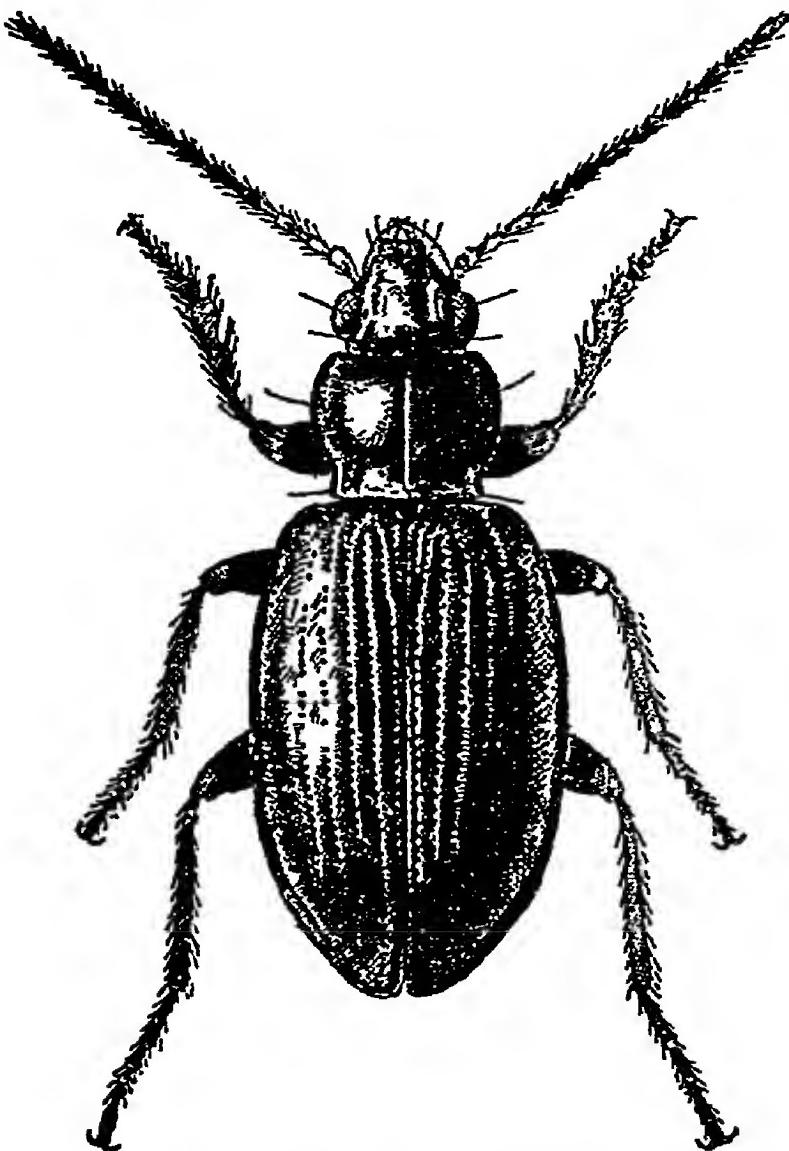


Fig 24.—*Bembidion bracculatum* Bates

a little oblique, sides rounded, sinuate close to base, hind angles sharp, a little obtuse, with a distinct though narrow carina; median line fine, transverse basal sulcus deep, basal foveæ short, narrow, deep, converging forwards, basal area rugose and very vaguely punctate. *Elytra* rather flat, ovate, about three-fifths wider than prothorax and as much longer than wide, border rounding shoulder and reaching slightly beyond

stria 5 ; punctate-striate, the striae not much impressed, the punctures very clear on basal half, 1 deep and 2 lightly impressed to apex, 3 to 6 behind and 7 throughout very faint, 1, 2, and scutellary striole, which meet, and 5 all a little deeper close to base, apical stria fairly deep, intervals practically flat, dorsal pores very distinct, adjoining stria 3 Microsculpture of the elytra formed by meshes about twice as wide as long, obsolete on the vertex and disk of prothorax

Length, 5·5 mm.

Distribution KASHMIR. Skerdu (*J. H. Leech*), according to the label, but Bates gives "Gooraïs Valley", Matayan (near Dras), 10,000 feet (*G. E. Hutchinson and J. A. Sillem*) UNITED PROVINCES. Gori River Gorge, 5000–9000 feet, Milam in the Gori Valley, 11,500 feet, and Laptel, 15,000 feet, all in Kumaon (*H. G. Champion*)

Type in Mr René Oberthur's collection

352 *Bembidion betegara*, Andr.

Bembidium betegara Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab. 1924, p. 82.

Colour black, upper surface blue or greenish-blue, palpi (except the penultimate joint of the maxillaries), joints 1 and 2 of the antennæ, the suture behind, and apex of the elytra ferruginous; trochanters, knees, tibiae, and tarsi brownish

Head with fairly deep parallel furrows; eyes not prominent; antennæ reaching basal third of elytra; surface impunctate. *Prothorax* cordate, moderately convex, a fourth wider than head and as much wider than long, base as wide as apex, its sides a little oblique, sides rounded, sinuate a little before base, hind angles right and sharp, with a small but distinct carina; median line and front transverse impression moderately developed, the latter bearing some punctures, basal foveæ small but deep, disk smooth, basal area rather coarsely and not very closely punctate. *Elytra* ovate, moderately convex, three-fifths wider than prothorax and as much longer than wide, border rounding shoulder and reaching stria 4; striae moderately impressed and finely punctate, 1, 2, and the scutellary striole meeting at base, 1 fairly deep throughout, the outer striae hardly less deep than the inner ones in front, but 2 to 7 are all a little shallower behind, apical stria well developed, joining 7, intervals a little convex, the two dorsal pores adjoining stria 3. Microsculpture of the elytra distinct, formed by very wide meshes, obsolete on disk of prothorax and vertex, but visible and formed by isodiametric meshes on the sides and back of the head

Length, 4·5–5 mm.

Distribution PUNJAB Spiti, Pulga; Kulu, Koty, and Mandi (all G. Babault) BUSHNAK: Sangla, 8000 feet (R. N. Parker)

Type in my collection

The example from Sangla has a small pale apical spot on each elytron

353 *Bembidion xestum*, Andr.

Bembidium xestum Androves, Ent. Month. May 1923, p. 97.

Colour black, shiny; upper surface blue-black, with here and there greenish reflections, joints 1 and 2 of antennae with base of 3 and 4, palpi, legs, and apical border of elytra ferruginous.

Head with deep furrows, diverging slightly behind; eyes rather flat; antennae reaching basal fourth of elytra, surface smooth, with one or two minute punctures only. Prothorax convex, cordate, about a third wider than head and as much wider than long, base bisinuate evidently wider than apex sides rounded, sinuate a little before base, hind angles sharply right, with a clearly marked carina, median line entire but rather fine, transverse impressions moderately deep, basal space wide and deep, basal area rather closely punctate. Elytra moderately convex, elongate oval nearly a half wider than prothorax, quite two thirds longer than wide, border terminating in a minute tooth opposite stria 5; stria moderately impressed, at least on disk, finely punctate, I deep throughout, the rest evanescent towards apex, scutellary striae and apical stria both rather slight, the latter hardly extending forward beyond the pore; intervals slightly convex on disk, I somewhat raised, dorsal pores adjoining stria 3. Microsculpture of the elytra consisting of moderately fine transverse lines, forming wide meshes, obsolete on the head and disk of prothorax.

Length, 5 mm.

Distribution PUNJAB. Kulu, Kasol, 6000 feet (R. N. Parker) UNITED PROVINCES Naini-Tal (H. G. Champion)

Type in the British Museum

The Kulu examples are a little wider than those from Naini-Tal and differ in some other particulars, but the material available for examination is so little that it seems best for the present to treat them as a variety.

354. *Bembidion menander*, sp. nov.

In size, colour, and general appearance closely resembling *B. xestum*, but differing in a few of its characters. Colour similar, but the basal two-thirds of the femora infuscated.

Head similar, prothorax proportionately larger, with a wider marginal channel the basal foveæ larger and deeper Elytra ovate, narrowed in front and dilated behind, widest well behind middle, the sides rather strongly rounded, whereas in *xestum* they are only gently rounded, stria 2 practically disappears before apex, though it can sometimes be traced by a line of faint punctures, the striae more deeply engraved, especially on disk, though not quite so deep as in *holconotum* Microsculpture similar, metasternal process bordered

Length, 5 mm

Distribution UNITED PROVINCES Mussooree, Happy Valley; Chakrata, Konain, 7850 feet (*J C M Gardner*)

Type in my collection

Key to the kempfi-group

1 (4) Prothorax strongly contracted behind, so that the base is no wider than the apex, microsculpture reticulate or wanting

2 (3) Elytra with the apical stria obsolete, microsculpture reticulate, but very faint, upper surface æneous, legs flavous

3 (2) Elytra with the apical stria present, but rudimentary, microsculpture wanting, upper surface black, with very faint greenish reflections, femora mainly piceous

4 (1) Prothorax not much contracted behind so that the base is evidently wider than the apex, microsculpture formed by very fine transverse lines

5 (6) Elytral striae clearly impressed, the hind dorsal pore on the interval, though adjacent to stria 3, upper surface black with faint metallic reflections *Length 5–5.5 mm*

6 (5) Elytral striae formed mainly by the punctures, the hind dorsal pore adjoining stria 3, upper surface rather bright metallic green *Length 4–4.5 mm*

kempfi, Andr., p 150

[p 152.
unicatum, sp nov.,

polites, sp nov., p 153

[p 153
chakrata, sp nov.,

355 *Bembidion kempfi*, Andr.

Bembidion kempfi Andrewes, Ent Month Mag 1922, p 178

Colour black, shiny; upper surface dark æneous, joint 1 of antennæ, with base of joints 2 to 4, palpi (except penultimate joint), and extreme apex of elytra more or less ferruginous, legs flavous

Head with short, wide, parallel, but comparatively deep furrows, eyes moderately convex, antennæ barely reaching basal third of elytra, surface practically impunctate Prothorax convex, cordate, about a fourth wider than head and

a third wider than long, base truncate, as wide as apex, sides rounded, sinuate rather before base, hind angles right and very sharp, with a clearly marked carina; median line not very deep, generally foveiform behind, but not as a rule reaching base, front transverse impression distinct, base depressed, foveæ rounded and fairly deep, surface smooth. basal area coarsely punctate, a few punctures near front margin. *Elytra* moderately convex, ovate, not quite two-thirds wider than prothorax, a half longer than wide, shoulders

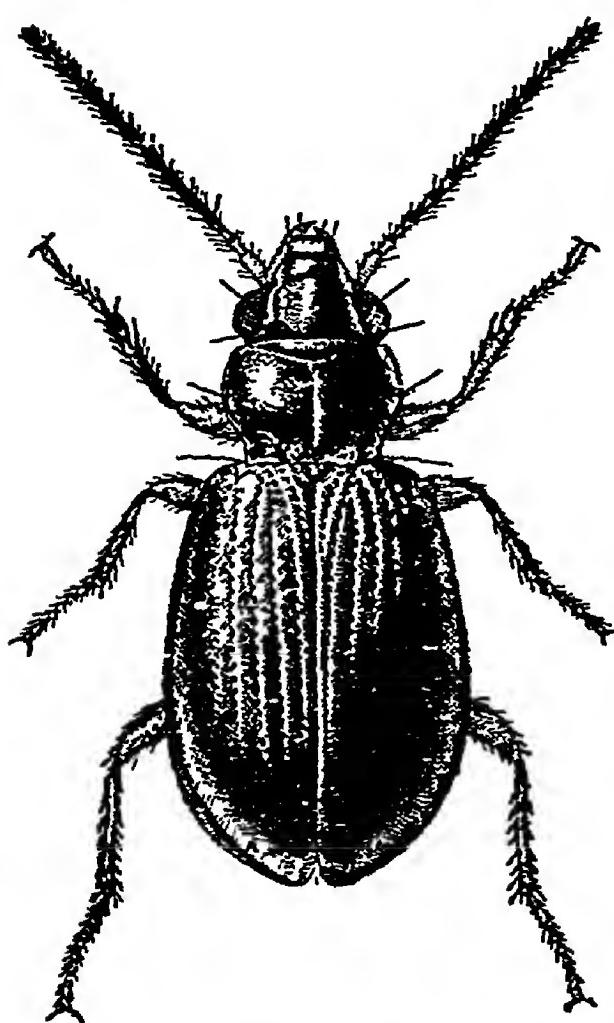


Fig. 25 — *Bembidion lempii* Andrewes

evident, border extending to stria 5; punctate striate, outer striae well marked on basal half, stria 1 deep to apex, the others obsolete behind, though 2 is visible close to apex, where it joins 1, a slight ridge at this point between it and the site of the apical stria, the apical pore isolated, scutellary striae rather short, strongly impressed at base, where it joins 1 and 2, intervals slightly convex on disk, dorsal pores small

but distinct Microsculpture of the elytra poorly defined, formed by wide, vague meshes, none on head or prothorax

Length, 3 5-4 mm.

Distribution PUNJAB Simla Hills, Matiana (*S W Kemp*), Theog, Kotgarh, and Fagu (*S N Chatterjee*), Simla (*B N Chopra*) BASHAHR. Daran (*R N. Parker*) UNITED PROVINCES West Almora and Upper Gumti Valley (*H G Champion*), Dehra Dun, Nim Nadi (*M Cameron*), Mussooree, Mossy Falls, and Woodstock Falls (*M Cameron*), Company Khud (*B. N. Chopra*), Chakrata division, Dodora Khud, Saini Khud, Binal Gad, and Manjgaon (all *M Cameron*), Khedar Khud (*S N Chatterjee*), Bear Garden, Mohna (*M Cameron*) In the United Provinces the specimens were nearly all taken between 5000 and 8000 feet, in the Punjab between 7000 and 8000 feet

Type in the British Museum

356. *Bembidion manicatum*, sp. nov.

Colour black, shiny; head and prothorax with faint greenish reflections. joints 1 and 2 of antennæ, with basal half of joint 3, apex of femora, basal half of tibiae, and apical border of elytra more or less ferruginous, tarsi piceous

Head with moderately deep parallel furrows, eyes rather flat, antennæ reaching basal third of elytra, one or two fine punctures at sides of vertex. *Prothorax* convex, cordate, a fourth wider than head, a fifth wider than long, equally contracted at extremities, sides rounded in front and gently sinuate close to base, hind angles sharply rectangular, with a rudimentary carina; median line fine, both transverse impressions rather shallow, basal foveæ fairly deep, basal area finely but not closely punctate. *Elytra* convex, ovate, a little more than two-thirds wider than prothorax, rather less than a half longer than wide, rather strongly narrowed in front, though the shoulders are square, border reaching stria 5, punctate-striate, the striæ very lightly impressed, the punctures conspicuous, at least on basal half, 1 deep to apex, the rest evanescent from about middle and barely visible near apex, the outer striæ formed by the punctures, 8 deep behind, joining the marginal channel behind shoulder, scutellary striole short, apical stria present but rudimentary, so that the pore stands out distinctly, intervals nearly flat, dorsal pores very small, adjoining stria 3. No visible microsculpture. *Sternum*: metasternal process bordered

Length, 4.5 mm.

Distribution KASHMIR Lidar Valley, Lidarwat, 9000 feet, 12 vi 1928 (*B M Bhatia*)

Type in the British Museum I have seen no other specimen

357 *Bembidion polites*, sp. nov.

Colour black, upper side with faint metallic green or blue reflections, palpi, joints 1 to 3 of antennæ, and legs pale ferruginous

Head with fairly deep, very uneven, parallel furrows; eyes moderately prominent, antennæ reaching basal fourth of elytra. A few punctures on the vertex and in and round the furrows. *Prothorax* convex, cordate, a fourth wider than head and as much wider than long, base much wider than apex, sides rounded in front and sinuate near base, the hind angles sharply rectangular, a carina present; median line rather fine, front transverse impression vague, a few punctures along it, the basal suture fairly deep, basal area depressed and fairly closely punctate. *Elytra* moderately convex orate, two-thirds wider than prothorax, not quite a half longer than wide, shoulders square, border rounding shoulder and reaching a point opposite stria 5 very clearly though not deeply punctate-striate, the outer striae formed mainly by the punctures, 1 and 8 fairly deep and reaching apex, the rest fading away behind, though traceable nearly to apex. 8 joining the marginal channel behind shoulder, scutellary stria well developed, apical stria only just visible, the pore standing out and practically isolated, sutural interval raised, the rest practically flat, two dorsal pores, the front one adjoining stria 3, the hind one slightly removed from it. The microsculpture of the elytra consists of very fine transverse lines forming very wide meshes; on the disk of prothorax it is barely visible. *Sternum*: metasternal process bordered

Length, 5-5.5 mm

Distribution UNITED PROVINCES. Mussooree, Childers Lodge, 7500 feet ASSAM Naga Hills, 4000 feet, 16 iii 1921 (S. N. Chatterjee)

Type in my collection; co-types in the Forest Research Institute, Dehra Dun

In one of the three examples from the Naga Hills the apical stria is impressed, but in other respects it does not differ from the other specimens

358 *Bembidion chakrata*, sp. nov.

Colour black, the elytra rather bright metallic green, head and prothorax a little darker, palpi, joints 1 to 3 of antennæ, and legs flavous, joints 4 to 11 of antennæ brown

Head with fairly deep, uneven, parallel furrows, extending to clypeus; eyes moderately prominent, antennæ not reaching far beyond base of prothorax, surface sparsely punctate on the front and vertex, and also in the furrows. *Prothorax* convex, cordate, a fourth wider than head, rather more than

a third wider than long, base bisinuate, evidently wider than apex, sides rounded in front, sinuate at about a fifth from base, hind angles slightly obtuse but sharp, with a very distinct carina; median line fine, front transverse impression obsolete at middle, though with a few punctures, basal foveæ deep, rugose, the space between them very clearly, though not coarsely, punctate *Elytra* moderately convex, ovate, two-thirds wider than prothorax less than a half longer than wide, shoulders square, border rounding shoulder and reaching a point between striae 5 and 6, finely but very clearly punctate-striate, the striae only lightly impressed in front, and all (except 1) disappearing a little before apex, 8 deep behind, joining the marginal channel behind shoulder, apical stria wanting and consequently the apical pore isolated, 1, 2, and scutellary striae meeting at base, where the surface is a little depressed, sutural interval raised, the rest flat, two dorsal pores adjoining stria 3. The microsculpture is formed by extremely fine transverse lines, visible only under the microscope. *Sternum* metasternal process bordered, though somewhat indistinctly, both it and the prosternal process with a few punctures

Length, 4-4.5 mm.

Distribution UNITED PROVINCES. Chakrata (*H G Champion*) SIKKIM Pashok, 2000 feet, 11 vi 1916 (*T C Harkess*)

Type in the British Museum, co-type in the Indian Museum, Calcutta

Key to the notatum-group

1 (2) Elytra wholly flavous, elytral striae moderately impressed in front, evanescent towards apex, the punctures rather fine and closely placed, surface of elytra with a microsculpture of very fine transverse lines Length 5-6 mm

[p 154
xanthochiton, Andr ,

2 (1) Elytra flavous, with a large, common, more or less rhomboidal, black or crimson-black patch a little behind middle, elytral striae deep in front and coarsely punctate, all visible throughout, no microsculpture present Length 4-4.5 mm

notatum, Andr , p 155

359 *Bembidion xanthochiton*, Andr

Bembidion xanthochiton Andrewes, Ent Month Mag 1922, p 176
Bembidion xanthochiton Jedlička, Acta Soc ent Čech xxx, 1933,
pp 3 and 8

Colour black, shiny, head and prothorax dark metallic green or blue, elytra, epipleura, joints 1 to 4 of antennæ, palpi, and legs flavous, venter mainly brown

Head convex, wide, frontal furrows deep, diverging a little behind; eyes prominent, antennæ slender, reaching basal fourth of elytra. Prothorax convex, cordate, about a sixth wider than head, fully a third wider than long, base truncate, a little wider than apex, sides rounded sinuate at basal fourth, hind angles right, sharp, with a well marked carina; median line fairly deep, front transverse impression fine but evident, hind one and basal foveæ deep, base coarsely punctate, the surface smooth and polished but with some very fine cross-striation. Elytra convex, ovate, but with the shoulders square, a half wider than prothorax, four-fifths longer than wide, border reaching stria 5, striae moderately impressed and rather finely punctate, 1 deep to apex, the others obsolescent behind, though visible to near apex, the outer striae shallower than the inner ones scutellary striae distinct, apical stria very slightly developed, intervals somewhat convex on disk only, dorsal pores rather small. Micro-sculpture of the elytra formed by extremely fine, closely placed, transverse lines; none on the disk of prothorax, while on the head some isodiametric meshes are visible at sides only.

Length, 5-6 mm.

Distribution PUNJAB: Simla Hills, Thedz (S. N. Chatterjee) UNITED PROVINCES: West Almora, Upper Gumti Valley, Ranikhet, and Haldwani (H. G. Champion) Mussooree, Mossy Falls and Kempti Falls (M. Cameron); Dehra Dun, Nagal. SIKKIM: Rangit Valley (H. Stevens) BENGAL: Gopaldhara (H. Stevens)

Type in my collection

Easily distinguished from its Indian congeners by the uniformly flavous elytra.

360 *Bembidion notatum*, Andr. [Plate III, fig 9]

Bembidion notatum Andrewes, Ent Month Mag 1922, p 175; id, Ent Month Mag 1926, p. 67.

Bembidion notatum Jedlicka, Acta Soc ent Cech xxx, 1933, pp 3 and 9

Colour black, shiny; head and prothorax dark metallic green, elytra, joints 1 to 3 of antennæ, with base of joint 4, palpi, and legs flavous, the elytra with a more or less rhomboidal crimson-black patch in the middle; base of venter piceous.

Head moderately convex, rather short and wide frontal furrows deep, uneven, diverging behind; eyes prominent, antennæ slender, reaching basal fourth of elytra. Prothorax convex, cordate, a sixth wider than head, a third wider than long, base truncate, slightly wider than apex, sides rounded in front, sinuate at basal fourth, hind angles right, sharp, with a well marked carina; median line, hind transverse

impression, and basal suture all strongly marked, base coarsely punctate, surface smooth with some very faint cross-striation. Elytra moderately convex, with rather square shoulders and parallel sides, three-fifths wider than prothorax, a little more than a half longer than wide, border extending inwards to stria 5, striae fairly deep with large clear punctures, 1 deep to apex, the rest deep on basal half, fainter, though visible towards apex, scutellary striole short but fairly deep, apical stria very faint, intervals convex on disk only, dorsal pores very distinct. No appreciable microsculpture. The common dark spot on the elytra is somewhat irregular in outline extending outwards on each side to stria 5 or 6, produced at middle both in front and behind and truncate at least behind.

Length, 4-4.5 mm.

Distribution UNITED PROVINCES West Almora, Gori Valley Upper Gunti Valley, and Naini-Tal (*H. G. Champion*); Binsar (*A. D. Innes*). Chakrata division Dodora Khud, Samj Khind, Chulli Khud, and Jadi Gad (*S. N. Chatterjee*) BIHAR Pusa BENGAL Kurseong (*Newton*) SIKKIM Ghum district (*M. Cameron*) ASSAM Garo Hills, Some swari River (*S. W. Kemp and B. Chopra*)

Type in the British Museum

The pale elytra, with 1 dark median patch, will at once distinguish this from all other Indian species.

Key to the pamirensis-group.

- 1 (2) Antennæ and legs black or reneous, elytra dark reneous, very shiny, without microsculpture, a small pale spot at the apex of each elytron Length about 4 mm [sicum, *Net.*, * p. 142 *gagates*, *Andr.*, var. sin.]
- 2 (1) Antennæ at base and legs more or less ferruginous
- 3 (42) Elytra with microsculpture
- 4 (51) Microsculpture of the elytra formed either by fine transverse lines or by meshes which are wider, generally much wider, than long
- 5 (14) Head more or less finely punctate both on disk and at sides
- 6 (9) Prothorax with a well developed emargination in the hind angles, the suture of the base horizontal
- 7 (8) Base of prothorax wider than apex, elytra with both a humeral and an apical spot. Length 5-5.5 mm.
- 8 (7) Base of prothorax not wider than apex, elytra with an apical spot only. Length 5.5-6 mm

uridum, *Andr.*, p. 159

[p. 160] *waziristanum*, *Andr.*

* Inserted here, though belonging to the brunnium group, on account of the pale apical spots on the elytra.

- 9 (6) Prothorax with the carina in the hind angles slight or wanting, the sides of the base somewhat oblique
- 10 (13) Head with only a few small punctures between the furrows, base of prothorax not wider than apex, head and prothorax blue Length about 4.75 mm
- 11 (12) Base of prothorax at middle punctate but not striate, elytral striae very lightly impressed on apical third Elytra each with two very large ferruginous spots, nearly meeting at middle
- 12 (11) Base of prothorax at middle both punctate and finely but conspicuously striate, elytral striae quite distinct behind and sometimes clearly impressed up to apex Elytra with the basal two fifths dark red, the apical fourth ferruginous
- 13 (10) Head finely though sparsely punctate at sides, on disk, and in the furrows, base of prothorax wider than apex, head and prothorax dark, with greenish reflections Length 5.75 mm
- 14 (5) Head impunctate, or with one or two small punctures only at sides of vertex
- 15 (43) Elytra bicolorous, though, when two spots are present on each elytron, the apical is often a little lighter than the humeral one
- 16 (25) Elytra with an apical spot only on each elytron Large species, 4.5-8 mm in length
- 17 (18) Elytra blue, with a red spot actually at the apex, the striae fairly deep on disk, shallower, but evident near apex
- 18 (17) Elytra not blue, with a preapical spot on each, the striae rather fine or, at most, moderately impressed on disk, faint behind
- 19 (20) Elytra piceous, with a vague metallic tint, the meshes of the microsculpture on the elytra not much wider than long on the disk, isodiametric near apex Length 7 mm
- 20 (19) Elytra brown-red, bronze, or æneous Length not exceeding 6 mm
- 21 (24) Elytra brown red or bronze, legs ferruginous Sides of prothorax strongly rounded in front and sharply sinuate before base. Length 5.25-6 mm
- 22 (23) Elytra bronze, with a sericeous gloss, a flavous spot before apex, prothorax a fifth wider than long, discal striae of the elytra lightly impressed

[p 161
palaciosi, Andr ,

[p 162
hutchinsoni, Andr ,

hyber, sp nov , p. 162

dardum, Bates, p 163.

[p. 164
languens, sp nov ,

ladas, Andr., p 165.

- 23 (22) Elytra brown-red, without sericeous gloss, prothorax a third wider than long, discal striae of the elytra moderately deep [p 166
pamiricola, Lutch ,
- 24 (21) Elytra aeneous, femora piceous, sides of prothorax moderately rounded in front and gently sinuate behind Length 4.5 mm [p 166
ration, Andr , p 166
- 25 (16) Elytra each either with a humeral and apical spot, which sometimes join, or with a broad ferruginous margin
- 26 (43) Elytra each with a humeral and apical spot, prothorax not unusually convex and less than a half wider than long
- 27 (36) Prothorax with a well developed carina on each side in the hind angles
- 28 (31) Both femora and elytra mainly dark
- 29 (30) Base of prothorax vaguely rugose-punctate, head and prothorax green, front spot on the elytra covering the shoulder and extending vaguely inwards to about stria 3 [p 167
ladakense, Andr ,
- 30 (29) Base of prothorax finely and rather closely rugose-punctate, head and prothorax bluish green, front spot on the elytra long and narrow, on intervals 5-6 [p 168
hazara, sp nov , p 168
- 31 (28) Femora entirely ferruginous
- 32 (33) Elytra very dark, the spots on them dark ferruginous, vaguely defined and sometimes obsolete [p 168
chitral, sp. nov., p. 168
- 33 (32) Elytra mainly light ferruginous
- 34 (35) Head and prothorax green, base of prothorax barely wider than apex, elytral striae lightly impressed, even on disk, intervals nearly flat [p 169
pamirense, Bates ,
- 35 (34) Head and prothorax blue, base of prothorax evidently wider than apex, elytral striae fairly deep on disk, intervals moderately convex [p 171
gilgit, sp nov , p 171
- 36 (27) Prothorax with a slight or rudimentary carina on each side in the hind angles
- 37 (40) Femora and elytra mainly dark, elytral striae 6 and 7 rather faint, formed by the punctures
- 38 (39) Surface slightly sericeous, elytral striae fine, lightly impressed, even on disk. Length 4.25-5 mm [p 171
luntaka, Andr , p 171
- 39 (38) Surface shiny, elytral striae moderately impressed on disk Length 5-5.25 mm [p 172
vorax, sp nov , p 172
- 40 (37) Femora entirely and elytra mainly ferruginous, elytral striae 6 and 7 lightly impressed
- 41 (42) Prothorax with the sides of the base horizontal, the hind angles sharply rectangular, elytral striae moderately impressed and finely punctate Length 5.5-6 mm [p 173
rubidum, Andr , p 173

- 42 (41) Prothorax with the sides of the base oblique, the hind angles slightly obtuse; elytral striae deep and rather coarsely punctate Length 4.75 mm clops, sp nov , p 174
- 43 (26) Elytra with a wide ferruginous margin, prothorax very convex
- 44 (45) Prothorax a half wider than long, base uneven, but hardly punctate, elytral striae very lightly impressed, even on disk [p 174.] exornatum, Andr ,
- 45 (44) Prothorax a third wider than long, base finely punctate, elytral striae on disk moderately impressed
- 46 (15) Elytra tricolorous, legs and palpi pale
- 47 (48) Microsculpture of the elytron formed by very fine transverse lines, visible only under the microscope, elytra with the basal half light or dark brown, the apical fourth dirty white, a piceous fascia separating the two parts
- 48 (47) Microsculpture of the elytra reticulate, the meshes very wide
- 49 (50) Elytra mainly dark, the basal third vaguely dark red, each with an oblique apical flavous spot
- 50 (49) Elytra with the basal half brown, the apical third flavous, a piceous fascia interrupted at suture, which is brown, separating the two parts
- 51 (4) Microsculpture of the elytra formed by isodiametric meshes, elytra as a rule mainly pale, sometimes with two spots on each, sometimes the whole surface pale, with only a dark central spot [p 178] fuscicrus, Motch ,
- 52 (3) Elytra without microsculpture, convex, and very shiny, generally with two red spots on each, prothorax with a carina on each side in the hind angles, the base rather closely punctate [p 180.] psilodorum, Andr.,

361 Bembidion uvidum, Andr.

Bembidion uvidum Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Cerab 1924, p 83, id, Ent Month Mag 1924, p 196

Bembidion bracculatum Andrewes (not Bates), in Mission Babault (vide supra), p 17 (part)

Colour black, shiny; upper surface dark metallic green, the elytra sometimes vaguely bluish, palpi (except the penultimate joint), joints 1 to 4 of the antennæ, and legs ferruginous, two spots of moderate dimensions on each elytron and apical border reddish

Head convex, frontal furrows wide, parallel, uneven, eyes only moderately prominent, antennæ reaching basal third of elytra, surface with some puncturation at sides and in the furrows. *Prothorax* convex, cordate, about a third wider than head, and as much wider than long, sides rounded, sinuate a little before base, which is truncate, and a little wider than apex, hind angles sharply rectangular, with a well developed carina, median line shallow, basal foveæ deep, the base finely and closely punctate, the puncturation extending a little forward along the median line and foveæ, a few punctures along the front transverse impression. *Elytra* convex, ovate, but with square shoulders, three-fifths wider than prothorax, not quite a half longer than wide, border extending inwards to stria 5, moderately punctate-striate, the striæ shallower at sides and obsolete near apex, though 2 is visible throughout and deepens a little close to apex, 1 deep throughout, scutellary striole and apical stria both well developed, intervals slightly convex on disk, the dorsal pores small. Microsculpture of the elytra formed by very wide meshes, obsolete on disk of prothorax, on the head the meshes are isodiametric, but visible at margins only.

Length, 4.5–5 mm

Distribution PUNJAB Kangra district (*G. Babault*) UNITED PROVINCES; Naini-Tal and Ranikhet (*H. G. Champion*)

Type in my collection

362 *Bembidion waziristanum*, Andr

Bembidion waziristanum Andrewes, Journ. Bomb. Nat. Hist. Soc. XXXV, 1932, p. 863

Colour black, upper side rather faintly æneous, palpi ferruginous, first joint of antennæ, legs (except base of femora), and a vague apical spot on each elytron dull red.

Head with deep parallel furrows, neck wide; eyes rather flat, antennæ moderately thick, reaching basal third of elytra, surface vaguely rugose between the furrows, with a few fine scattered punctures behind. *Prothorax* convex, cordate, about a fourth wider than head and as much wider than long, extremities equally contracted, sides rather strongly rounded in front, sinuate a little before base, the marginal channel widening a little on basal half, hind angles sharp and rectangular, with a well developed carina, median line and transverse impressions all moderately deep, basal foveæ deep, surface smooth, basal area finely and irregularly punctate. *Elytra* moderately convex, oval, a half wider than prothorax, three-fifths longer than wide, border at base reaching stria 5, striæ moderately deep and very clearly

punctate, much shallower, though visible, at sides and apex, 1 deep throughout, 3 to 6 only disappearing just before apex, 2 shallow, but visible near apex, scutellary striole fairly long, apical stria moderately deep, joining 7, intervals somewhat convex on disk, otherwise flat, dorsal pores conspicuous. The microsculpture of the elytra consists of fine transverse lines forming very wide meshes, none on prothorax or head, except on labrum and neck, where there are isodiametric meshes.

Length, 5.5-6 mm

Distribution WAZIRISTAN Razmak (G. Palacios)

Type in the British Museum

363 *Bembidion palaciosi*, Andr

Bembidion palaciosi Andrewes, Journ. Bomb. Nat. Hist. Soc. xxxv., 1932, p. 864

Colour piceous, head and prothorax blue, palpi, antennae, and legs flavous, elytra each with two large ferruginous spots, nearly meeting at middle

Head with deep, wide, parallel furrows, eyes prominent, antennae slender, barely reaching basal third of elytra; surface almost impunctate on disk, but with a few punctures at sides behind. Prothorax convex, cordate, only a little wider than head, a fourth wider than long, extremities equally contracted, sides strongly rounded in front, sinuate close to base, marginal channel very narrow, hind angles sharp and rectangular, with a slight carina; median line and transverse impressions all moderately marked, basal foveæ small but fairly deep, surface nearly smooth, basal area finely but clearly punctate. Elytra moderately convex, ovate, about two-thirds wider than prothorax, three-fifths longer than wide, widest behind middle, border at base reaching stria 5, striae moderately deep and very clearly punctate, much shallower at sides and behind, 1 deep throughout, 2 quite distinct to apex, 7 almost invisible, scutellary striole fairly long, apical stria rather short, joining 5, intervals somewhat convex on disk, flat elsewhere, dorsal pores small, but quite distinct. Microsculpture of the elytra formed by very fine wide meshes, practically none visible on prothorax, but some isodiametric meshes can be seen on the neck.

Length, 4.75 mm

Distribution WAZIRISTAN. Razmak (G. Palacios)

Type in the British Museum

364. *Bembidion hutchinsoni*, Andr.

Bembidion hutchinsoni Andrewes, Mem Conn Acad x, 1934,
pp 24 and 26

Colour piceous beneath, blue-black above, palpi, joints 1 to 4 of antennæ, and legs ferruginous, basal two-fifths of the elytra dark red, apical fourth pale ferruginous, so that there is a dark band across them, the outline of which is vague and somewhat variable

Head with deep, uneven furrows, converging very slightly in front, eyes prominent, antennæ slender, reaching basal third of elytra; surface punctate at sides behind, and with a few scattered punctures on disk. Prothorax convex, cordate, about a sixth wider than head, a fifth wider than long, base slightly oblique at sides, hardly wider than apex, sides well rounded in front, sinuate a little before base, hind angles right, fairly sharp, and with a slight carina, median line and the small basal foveæ moderately deep, transverse impressions shallow, basal area a little depressed and finely punctate, with some fine but conspicuous striation. Elytra subquadrate, moderately convex, a half wider than prothorax, nearly two-thirds longer than wide, shoulders evident, border reaching stria 5, striae clearly punctate, moderately impressed on disk, more lightly at sides and behind though in some specimens (including type) clearly impressed to apex, scutellary striole and apical stria both present, but rather slight, intervals a little convex on disk, dorsal pores very distinct, on stria 3, at about a third and two-thirds. Microsculpture of the elytra consisting of very fine transverse lines, which form very wide meshes, none on disk of prothorax or head. Metasternal process bordered and with a transverse groove behind it.

Length, 4.6-5 mm

Distribution KASHMIR: Kiam, 15,630 feet (G. E. Hutchinson)

Type in my collection

The specimens were taken round the edge of a hot spring.

365 *Bembidion khyber*, sp nov

Colour piceous, head and prothorax with greenish reflections, palpi, joints 1 to 4 of antennæ (rest brown), and legs flavous. The elytra are pale, with a piceous fascia just behind middle, expanding a little towards apex along the inner intervals, while the marginal channel from the base to the fascia and an area round the scutellum are also piceous, in front of the fascia the pale colour is ferruginous, behind it is yellow-white.

Head with moderately deep parallel furrows, just extending to clypeus, eyes fairly prominent; antennæ reaching basal

fifth of elytra; surface with a number of punctures, at sides and middle of vertex, and between and in the furrows Prothorax convex, cordate, very little wider than head, about a fifth wider than long, base a little wider than apex, sides strongly rounded in front, sinuate at a fifth from base, hind angles sharply rectangular, with only a rudimentary carina, median line fine, front transverse impression very shallow, with a few fine punctures, hind one and basal foveæ fairly deep, basal area coarsely punctate Elytra rather flat, ovate, a half wider than prothorax, nearly three-fifths longer than wide, shoulders square, border reaching stria 5; rather finely punctate-striate, 1 reaching apex, the remainder shallower behind, though 2 reaches apex, 7 rather rudimentary, 8 deep behind, joining marginal channel behind shoulder, apical stria and scutellary striole both well developed, intervals nearly flat, 1 very narrow and somewhat raised behind, dorsal pores adjoining stria 3 Micro-sculpture of the clytra formed by fine and very wide meshes Sternum. metasternal process bordered

Length, 6.75 mm

Distribution NORTH-WEST FRONTIER PROVINCE: Khyber Pass, Alimasjid, 25 iv. 1916 (T. B. Fletcher)

Type in the British Museum This is the only example I have seen

At first sight very much like *pamirensis* Bates, but larger, the elytra somewhat differently coloured, the head bearing very evident punctures, the sides of the prothorax much more rounded.

366 *Bembidion dardum*, Bates

Bembidion dardum Bates*, Proc Zool Soc Lond 1899, p 212.

Andrewes, Ent Month Mag 1924, p 191

Bembidion terminalis Heer [Faun Col Helv 1941, p 564] subsp *bucharicum* Netolitzky, Kai Rundsch 20, 1934, p 69; id., Att Mus Civ. Trieste, xu, 1934, p 93

Colour piceous, shiny: upper surface dark blue; palpi, joints 1 and 2 of the antennæ, and legs ferruginous; apical margin of elytra dull red over a space equal to the width of three intervals, the colour running forward along sides to about a third from apex

Head convex, with short, wide frontal furrows; eyes only moderately prominent; antennæ very slender, reaching basal fourth of elytra, surface impunctate Prothorax convex cordate, not quite a third wider than head, about a fourth wider than long, base truncate, evidently wider than apex sides well rounded, sinuate a little before base, hind angle sharply rectangular, with only a rudimentary carina, median line fine, base slightly depressed, basal foveæ small and rather

shallow, basal area with some fine but rather faint puncturation. *Elytra* rather flat, elongate-ovate, about two-thirds wider than prothorax, three-fifths longer than wide border extending inwards to stria 5, striæ moderately deep on disk and finely punctate, 1 deep throughout, 7 very faint, 2 to 7 evanescent behind, but 2 a little deeper again close to apex, scutellarly striole fairly long, apical stria moderately developed; intervals lightly convex on disk, dorsal pores fairly conspicuous Microsculpture of the elytra consisting of fine transverse lines, which form meshes about three times as wide as long, on the prothorax the meshes are only just visible; on the head some isodiametric meshes are visible behind

Length, 6·5-7 mm

Distribution KASHMIR "Skardo" (in the text), "Goorais Valley" (on the label) BOKHARA

Type in Mr René Oberthur's collection The type and the specimen referred to by Dr Netolitzky, which also came from Skardu (*L Capriacco*), are the only Indian examples seen, and in the latter the red colour at apex is practically confined to the border Examples of *bucharicum* from Central Asia are generally piceous, with a greenish reflection, and a very vague reddish spot is sometimes visible at a little distance from apex The type of *bucharicum* is in Dr. Netolitzky's collection

367 *Bembidion languens*, sp nov

Colour piceous beneath, head and prothorax very dark greenish-blue, elytra piceous, with vague green reflections, each with a faint red spot behind on intervals 5 to 7, legs and antennæ ferruginous, joints 3 to 11 of the latter dark at apex

Head with deep, wide, irregular furrows; eyes fairly prominent, antennæ long and very slender, reaching basal fourth of elytra, surface impunctate, except for a single puncture on vertex *Prothorax* convex, cordate, a fourth wider than head and as much wider than long, base a little wider than apex, sides rounded in front, sinuate at a fifth from base, the hind angles right, sharp, hardly projecting laterally, and with only a rudimentary carina, median line fine but distinct, basal area transversely depressed, finely rugose-punctate, surface with some faint cross-striation *Elytra* moderately convex, ovate, about three-fourths wider than prothorax, and a half longer than wide, border rounding shoulder and reaching stria 5; striæ rather lightly impressed on disk but densely punctate, 1 deep, and 2 quite distinct to apex, the rest much finer behind and the outer ones rather faint throughout, 8 deep behind, joining marginal channel behind shoulder, scutellarly striole and apical stria both

moderately developed; intervals a little convex on disk only, the two dorsal pores on the inner side of stria 3. Micro-sculpture of the elytra formed by meshes a little wider than long on the disk, isodiametric towards apex and on the head, but on the head and disk of prothorax they are barely visible. Suturum. metasternal process bordered

Length, 7 mm.

Distribution BASHAHR STATE: Poo

Type in my collection. This is the only example seen

365 *Bembidion ladas*, Andr. [Plate IV, fig. 3]

Bembidion ladas Andreev, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Cat. 1924, p. 79, t. 1 f. 5

Colour black, head and prothorax dark metallic green, elytra piceous bronze; palpi, joints 1 and 2 of antennae, with base of 3 and 4, legs, an apical spot on each elytron, and the apical border ferruginous, femora rarely somewhat infuscate.

Head small, convex, frontal suture deep, parallel, and uneven, eyes rather flat; antennae reaching basal third of elytra, surface impunctate. Prothorax very convex, cordate, nearly a half wider than head, about a fifth wider than long, base bimarginate, slightly narrower than apex, sides strongly rounded, sinuate quite close to base, the hind angles sharp, though slightly obtuse, with a distinct carina; median line fine, front transverse impression rather deep, base depressed, the suture deep, basal area finely rugose-punctate. Elytra convex, elongate-ovate, but with distinct shoulders, a half wider than prothorax, rather more than a half longer than wide, border extending inwards to stria 5, striae lightly impressed and finely punctate, 1 deeper behind and continued to apex, the rest evanescent at sides and apex, but 2 deepening a little close to apex, scutellary striae and apical stria both moderately developed; intervals nearly flat, even on disk, dorsal pores small but distinct, surface with a slight silky gloss, the apical spots rather small, on intervals 5 to 7, curving inwards behind and sometimes nearly meeting in front of apex. Microsculpture of the elytra consisting of very fine transverse lines, forming meshes three times as wide as long, none on head or prothorax.

Length, 5.25-6 mm.

Distribution KASHMIR. Nima-Mud, Tcho-Morari, and Salt Lake, all in Rupshu (σ Babault); Leh and Mulbeck, in Ladakh (σ Babault), Rongo (F . Stoliczka).

Type in my collection

An example found at Poo, in Bashahr, perhaps belongs to this species, but differs in some particulars from the typical form.

369. *Bembidion pamiricola*, Lutch

Bembidion pamiricola Lutchnik, Abh Pamir Exped 1928, II, 1930, p 34, t 1, f. 2, Netolitzky, Att Mus Civ Trieste, XII, 1934, p. 95

Very closely allied to *B. ladas* in size, colour, and shape. The frontal furrows are shorter and only reach mid-eye instead of hind-eye level. The prothorax is relatively wider, being a third instead of a fifth wider than long, and the base is rather less closely punctate. On the elytra the discal striae are much deeper and (in the example examined) the silky gloss, noticeable in *ladas*, is absent.

Length, 5·5–6 mm

Distribution KASHMIR Biaho Valley, Bardumal, 11,000 feet (*L. Caporacco*) PAMIRS

Type in the Museum of the Petrograd Academy of Sciences.

The only specimen seen is that from Bardumal, which appears to be somewhat immature, but Dr Netolitzky, who determined the species, had also examined one of the original examples from the Pamirs.

370 *Bembidion ixion*, Andr

Bembidion ixion Andrewes, Mem. Conn Acad x, 1934, pp 24 and 26

Colour piceous beneath; head and prothorax æneous, elytra dark reddish brown, with a very faint metallic tinge, and a vague dark red apical spot on each, joints 1 to 3 of antennæ, tibiæ, and tarsi more or less ferruginous.

Head with fairly deep parallel furrows, eyes moderately prominent; antennæ reaching basal third of elytra, surface impunctate. Prothorax convex, subcordate, not quite a third wider than head, two-fifths wider than long, base slightly arcuate, as wide as apex, sides rounded in front, slightly sinuate behind, hind angles sharp but a little obtuse, each with a short but fairly sharp carina, bounding the small, deep, rounded foveæ on the outer side, median line and front transverse impression moderately deep, basal area depressed, finely but not closely rugose-punctate. Elytra convex, ovate, not quite a half wider than prothorax and not quite three-quarters longer than wide, border extending inwards a little beyond stria 5, shoulders visible, but not prominent, punctate-striate, the inner striae moderately impressed on disk, much less so at sides, 7 represented by a row of minute punctures, all (except 1) evanescent towards apex, but 2 is impressed quite close to apex, scutellary striae and apical stria only moderately developed, intervals a little convex on disk only, dorsal pores fairly distinct, adjoining stria 3, just before middle

and at three-fourths Microsculpture of the elytra consisting of fine transverse lines, which form meshes quite three or four times wider than long; none on disk of prothorax or head. Metasternal process bordered

Length, 4.5 mm

Distribution KASHMIR: Matyan, 10,000 feet (*G. E. Hutchinson*)

Type in my collection. This is a unique ♂ specimen

371. *Bembidion ladakense*, *Andr.*

Bembidion tibiale Bates (not Duftschmid), in Scientific Results of the Second Yarkand Mission, 1891, Col p 19

Bembidion bracculatum Andrewes (not Bates), in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 17 (part), and note 1

Bembidion ladakense Andrewes, Ent Month Mag 1924, p 195.

Bembidion ladakense Netolitzky, Att Mus Civ Trieste, xii, 1934, p 94

Colour piceous, upper surface metallic green, the elytra with only faint greenish reflections; palpi (except penultimate joint), joints 1 to 3 of antennæ, with basal half of 4, apex of femora, tibiae, tarsi, and two spots on each elytron ferruginous

Head with fairly deep, uneven, parallel furrows; eyes only moderately prominent; antennæ stout, reaching basal third of elytra; surface practically impunctate. *Prothorax* convex, cordate, about a third wider than head and as much wider than long, base bisinuate, a little wider than apex, sides rounded, sinuate a little before base, hind angles sharply rectangular, with a short carina; median line moderately deep, base depressed, the foveæ small but deep, basal area vaguely punctate. *Elytra* moderately convex, ovate; but with square shoulders, quite a half wider than prothorax, three-fifths longer than wide, border extending inwards to stria 5; striae moderately impressed and finely punctate, shallower, but quite clear both at sides and apex, scutellary striole very fine, 2 fairly deep near apex, apical stria moderately developed, intervals nearly flat, dorsal pores quite distinct. The shoulder spot is large and disappears vaguely towards the middle, the apical spot is smaller and oblique, bending inwards behind. Microsculpture of elytra very clear, formed by meshes from two to three times wider than long; that of prothorax obsolete on disk; on the head the meshes are isodiametric, but visible at sides only

Length, 5.5-6 mm

Distribution KASHMIR: Mulbeck in Ladakh, Gund, and Baltal (*G. Babault*); Khalatse; Biaho Valley, Bardumal,

11,000 feet (*L Capriacco*) PUNJAB Sumdeo in Lahul (*G Babault*)

Type in my collection; the specimen determined by Bates as *tibiale* is in the Indian Museum, Calcutta

In the example from Gund the apical spot is missing

372 *Bembidion hazara*, sp. nov.

Colour black, head and prothorax with vague bluish-green reflections, joints 1 and 2 of antennæ, with base of joints 3 and 4, tibiae, tarsi, apical third of femora, two spots on each elytron, together with the apical border, ferruginous, rest of antennæ and penultimate joint of palpi fuscous. The elytral spots are on intervals 5 and 6, the humeral one long and narrow, the apical one rather small

Head with fairly deep parallel furrows, eyes moderately prominent, antennæ reaching basal third of elytra, a few minute punctures at sides of vertex. *Prothorax* convex, cordate, about a third wider than head and as much wider than long, base only a shade wider than apex, sides rounded in front and sinuate near base, the hind angles sharply rectangular, with a short carina, median line very fine, front transverse impression obsolete, though one or two fine punctures are visible on its site, hind impression and basal foveæ moderately deep, basal area finely rugose-punctate, some longitudinal striation along the hind margin. *Elytra* flat, ovate, three-fifths wider than prothorax, two-thirds longer than wide, shoulders square, border reaching stria 5, rather lightly punctate-striate, 1 deep to apex, the outer striae formed by very fine punctures, striae 2 to 7 all very faint behind, though visible to apex, 2 a little deeper just before apex, 8 deep behind, joining marginal channel behind shoulder, both scutellary striae and apical stria well developed, the latter joining stria 7, intervals flat, dorsal pores very large, as wide as an interval, adjoining stria 3. *Microsculpture* formed by moderately wide meshes, none on disk of prothorax. *Sternum* metasternal process finely bordered

Length, 5.5 mm

Distribution NORTH-WEST FRONTIER PROVINCE Hazara, Upper Kagan Valley, Narang, 8000 feet (*H G Champion*)

Type in the British Museum I have seen only the type-specimen

373 *Bembidion chitral*, sp. nov.

Colour black, moderately shiny, head and prothorax dark green, palpi, joints 1 and 2 of antennæ, with base of joints 3 and 4, legs, and two spots on each elytron ferruginous. The spots are variable in size, vaguely defined, and sometimes

obsolete, the front one is generally elongate and covers the shoulder, the hind one sometimes extending to the apex

Head convex, frontal furrows parallel, uneven, eyes fairly prominent, antennæ nearly reaching middle of elytra; front often vaguely transversely striate, a few punctures on each side behind. *Prothorax* convex, cordate, a fourth wider than head and as much wider than long, base truncate, evidently wider than apex, sides rounded in front, sinuate near base, hind angles sharply rectangular, often projecting a little laterally, with a well developed carina, median line and front transverse impression shallow, hind transverse impression a little deeper, basal foveæ wide and deep, base finely punctate, the punctures generally extending a little forwards along median line, marginal channels, and in front of the carinæ, some vague puncturation also visible near front margin. *Elytra* convex, ovate, but with square shoulders, three-fifths wider than prothorax, not quite a half longer than wide, border bent slightly backwards at extremity, without quite reaching stria 5; moderately punctate-striate, shallower at sides and apex, but visible everywhere, 1 fairly deep throughout, scutellary striole and apical stria both lightly impressed; intervals somewhat convex on disk only, dorsal pores small, adjoining stria 3. Microsculpture of the elytra formed by very wide meshes; none on disk of prothorax, but vague isodiametric meshes are visible on the head, especially on the neck. Metasternal process bordered.

Length, 4.5-5.25 mm

Distribution NORTH-WEST FRONTIER PROVINCE Chitral, Madaglasbt and Izh, Lutkoh Valley (*B. N. Chopra*).

Type in the Indian Museum, Calcutta, co-types in my collection

374 *Bembidion pamirensis*, Bates

Bembidium pamirensis Bates *, Proc Zool Soc 1878, p 718, id., Scientific Results of the Second Yarkand Mission, 1891, Col., p 18

Bembidion pamirensis Müller, Kol Rundsch 1918, p 90

Colour piceous, head and prothorax metallic green, palpi, antennæ, legs, and elytra more or less ferruginous, a brown vitta on the elytra, covering intervals 1 and 2 on each side at base, expanding into a piceous spot of moderate size at middle, but not nearly reaching apex, the spot dilated at sides and sometimes reaching margin, and extending along interval 9 and the marginal channel.

Head convex, with uneven, parallel furrows, eyes rather flat, surface with one or two minute punctures. *Prothorax* convex, cordate, quite a fourth wider than head, a third wider

than long, equally contracted at extremities, sides rounded, sinuate close to base, hind angles sharply rectangular, with a distinct carina; median line moderately impressed, basal foveæ deep, basal area depressed, moderately punctate, and longitudinally rugose, surface generally vaguely and rather irregularly striate. *Elytra* rather flat, ovate, but with evident shoulders, a half wider than prothorax, nearly two-thirds longer than wide, border reaching stria 5, striae rather lightly impressed and very finely punctate, I fairly deep

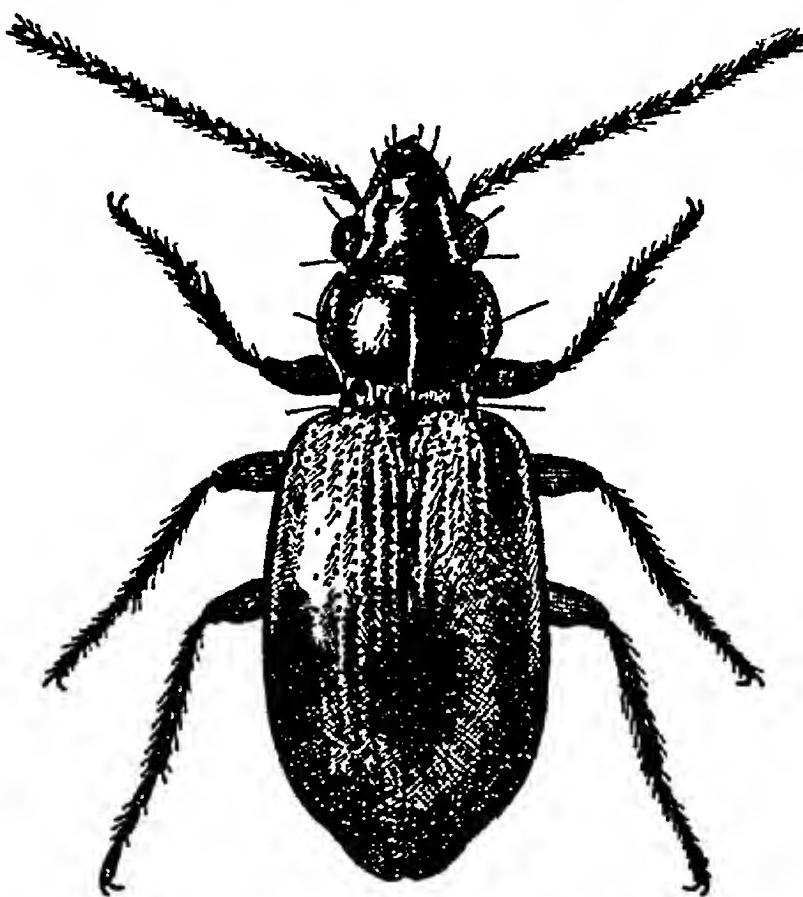


Fig. 26.—*Bembidion pamirense* Bates

throughout, the rest shallower on disk and not obliterated either at sides or behind, scutellary striae and apical stria only moderately developed, intervals nearly flat, dorsal pores small but distinct. Microsculpture on the elytra very irregular, but formed by meshes from two to three times wider than long, obsolete on disk of prothorax and on head, but isodiametric meshes are visible on the neck

Length, 4·75 mm.

Distribution PAMIRS, between Sirikol and Panga (F. Stoliczka)

Type in the Indian Museum, Calcutta

In my Catalogue I gave Gilgit as another locality, but the specimens from this place turn out to belong to another species, which is described below.

375 *Bembidion gilgit*, sp nov.

Colour piceous, surface shiny, head and prothorax dark blue, palpi, joints 1 to 3 of antennæ (rest brown), and legs ferruginous, elytra each with two large, dull red spots, which cover the greater part of the area, and sometimes meet.

Head with moderately deep furrows, diverging a little behind and not extending on to clypeus; eyes moderately prominent; antennæ reaching basal fourth of elytra, vertex with a few small punctures at sides. *Prothorax* convex, cordate, relatively rather large and wide, rather more than a fourth wider than head, a fifth wider than long, base evidently wider than apex, sides rounded in front, sinuate at a fifth from base, the hind angles sharply rectangular, with a carina present; median line fine, front transverse impression slight, but with a few fine punctures, basal foveæ fairly deep, the whole of the basal area punctate. *Elytra* rather flat, ovate, rather more than a half wider than prothorax, and as much longer than wide, shoulders square, border reaching stria 5; punctate-striate, the striae fairly deep on disk, shallower at sides and behind, but all visible to apex, 1 deep to apex, and 2 only a little shallower behind, 8 deep behind, joining marginal channel behind shoulder, apical stria present, the scutellary striae rather long; intervals convex on disk, dorsal pores adjoining stria 3. Microsculpture of the elytra formed by fine and very wide meshes, none on disk of prothorax. *Sternum* metasternal process bordered

Length, 4.5–5 mm

Distribution KASHMIR Gilgit, 5000 feet, xu 1886 (G. M. Miles)

Type in the Indian Museum, Calcutta, co-types in my collection

376 *Bembidion luntaka*, Andr

Bembidion luntaka Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 75

Bembidion luntaka Jedlůška, Acta Soc ent Čech xxx, 1933, pp 5 and 15

Bembidion luntaka Netolitzky, Att Mus Civ Trieste, xu, 1934, p 94; Andrewes, Mem Conn Acad x, 1934, p 24, Netolitzky in Visser, Karakorum, i, 1935, p 273

Colour black, upper surface dark metallic green, elytra often piceous, slightly sericeous, palpi (except penultimate joint), joints 1 and 2 of the antennæ, with basal half of 3 and 4,

tibiae, tarsi, and apical half of femora flavous, elytra each with two fairly large but vaguely defined ferruginous spots, the humeral one reaching base, the two apical spots sometimes meeting behind and forming a crescent.

Head with fairly deep parallel furrows, eyes rather flat, antennæ reaching basal fourth of elytra, one or two fine punctures at sides of vertex. *Prothorax* convex, cordate, about a fourth wider than head and a third wider than long, equally contracted at extremities, sides of base oblique close to the angles, sides well rounded in front and sinuate near base, hind angles sharp, but a little obtuse, with a small carina, median line fine, front transverse impression faint, hind one and basal foveæ moderately deep, basal area finely rugose-punctate. *Elytra* moderately convex, ovate, nearly two-thirds wider than prothorax, and as much longer than wide, shoulders square, border reaching stria 5, rather finely punctate-striate, I deep to apex, the rest evanescent at sides and apex, though visible practically throughout, apical stria and a short scutellary striole both present, intervals slightly convex, dorsal pores rather small. Microsculpture of the elytra formed by wide transverse meshes, none visible on head or disk of prothorax.

Length, 4 25–5 mm

Distribution KASHMIR Leh, Mulbeck, Nuria, Baltal, Sone-marg, Koty, and Nima-Mud (all *G. Babault*), Sooroo basin, Shumshakarboo and Kargil, Indus Valley, Olthing-thang, Mashung, Parkutta, Tolti, Gol, and Skardu; Shigar Valley, Shigar, Juno, Alchori, and Kushumul. Braldo Valley, Chokpiong, Askole, and Biafo, Punmah Valley, Shimtsa, Dumultar, and Tsok, Biaho Valley, Paju (all *L. Caporiacco*), Himis and Tang-tse, Mugleb (*G. E. Hutchinson*), Matayan (near Dras), Khardong and Lower Shyok, Shyok Valley between Katakkik and Sasei Brangsa (all *J. A. Sillem*) BASHAHR Poo, Sangla, 8000 feet (*R. N. Parker*) PUNJAB. Keiling, Sumdeo, Sisu, and Zingzinbar, all in Lahul (*G. Babault*), Simla.

Type in my collection

A very variable species both as regards form and colour, the base of the antennæ and legs are sometimes infuscate, while the humeral, and sometimes also the apical spot on the elytra, may disappear altogether; the elytral striae vary considerably in depth. Specimens have been met with at from 7000 to 13,000 feet.

377. *Bembidion vorax*, sp. nov.

Very closely allied to *lunulata* and similarly coloured, but on average a little larger. The head is similar, but with the

frontal furrows a little longer and more regular. The prothorax is relatively rather wider with more strongly rounded sides, the basal area with fewer punctures and only slightly rugous. The most obvious distinction is in the elytra, where the striae are very lightly impressed and the intervals flat, whereas here the four inner striae are moderately deep and the adjoining intervals somewhat convex. The microsculpture of the elytra is very much the same, but the surface is rather more shiny and without the silky glaze generally seen in *lyntala*.

Length, 5-5.25 mm.

Distribution UNITED PROVINCES (H. G. Champion)

Type in the British Museum - co-types in Mr. Champion's collection and in my own

378 *Bembidion rubidum*, Andr.

Bembidion rubidum Andr., Ent. Month. Mag. 1831 p. 176

Colour black; head and prothorax very dark bluish-green, elytra piceous, with vague metallic-green reflections nearly the whole of the basal half, except margin and suture, and a large oblique spot on each behind, extending to apex, dull red; palpi, joints 1 to 3 of antennae, and legs ferruginous.

Head convex, with traces only of minute punctation on each side behind furrows deep and wide, somewhat sinuous, eyes rather flat, antennae reaching basal third of elytra. Prothorax convex cordate, nearly a third wider than broad, a third wider than long, base slightly wider than apart its sides, a little oblique sides rounded in front and situated rather before base, hind angles sharply rectangular, with a slight carina; median lobe fine basidpressed so far deep converging a little forward, basal area uneven, sparsely and irregularly punctate. Elytra convex, ovate, but with excurrent suture, three-fifths wider than prothorax, nearly three-quarters longer than wide, border just marking stria 5, stria moderately impunctate, freely but closely punctate in centre and finally down near apex, the remainder fainter at sides and below, last 2 impunctate and widening out close to apex, apical strip finely, deeply, centrally, with short, horizontal, raised, slightly elevated pores clearly marked. The transverse striae faintly slightly raised more raised, obscure on disk of prothorax and on head, but rod-shaped rostrum can be seen on the prothorax.

Length, 5.3-6 mm.

Distribution. BURMA: Rangoon: March, 1888 (P. N. Parker); KANTHIE (Shelton Valley, Bhamo), April 1888 (B. M. Brit. Mus.).

Type in my collection.

The body is reddish brown excepting a dark area

379. *Bembidion clops*, sp nov

Colour black, shiny; head and prothorax dark green; joints 1 to 3 of antennæ, legs, and two spots on each elytron, including apical border, more or less ferruginous, rest of antennæ and penultimate joint of palpi fuscous. The elytral spots occupy nearly the whole of the basal and apical thirds, the front darker than the hind one.

Head with moderately deep parallel furrows, eyes not very prominent, antennæ reaching basal fourth of elytra, one or two minute punctures on each side of vertex. *Prothorax* convex, cordate, about a third wider than head and as much wider than long, base slightly wider than apex, sides rounded in front and sinuate near base, the hind angles sharp, though slightly obtuse, with a short carina, median line very fine, front transverse impression faint, but with traces of puncturation, basal foveæ deep, the basal area finely rugose-punctate. *Elytra* convex, ovate, three-fifths wider than prothorax, rather more than a half longer than wide, shoulders square, border reaching stria 5, punctate-striate, the striæ moderately deep on disk, shallower at sides and very shallow near apex, 1 deep to apex, 2 a little deeper near apex, 8 deep behind, joining marginal channel behind shoulder, apical stria and scutellary striole both well marked, intervals moderately convex on disk, dorsal pores adjoining stria 3. Microsculpture of the elytra formed by very wide meshes, none on disk of prothorax. *Sternum* mestasternal process bordered.

Length, 4.75 mm.

Distribution KASHMIR. Jhelum Valley, Bumyar, 5000 feet, 22. vi 1928 (B M Bhatia)

Type in the British Museum I have seen no other example

380. *Bembidion exornatum*, Andr

Bembidion exornatum Andrewes, The Carabidæ of the Third Mount Everest Expedition, 1924, Trans Ent Soc Lond 1930, pp 3 and 13.

Colour piceous upper surface dark metallic green, elytra with a wide ferruginous margin, extending inwards to stria 5 near base and to stria 6 at middle, slightly wider at apex, joints 1 and 2 of antennæ, basal joints of palpi, and legs ferruginous, the knees darker, the tibæ paler.

Head convex, with deep, very uneven, parallel furrows, eyes moderately prominent, antennæ rather slender, reaching basal fifth of elytra, surface impunctate, with a small central pore on vertex. *Prothorax* cordate, very convex, about a fourth wider than head and fully a half wider than long, sides strongly rounded in front and sharply sinuate at a fourth

from base, hind angles right, sharp, and projecting a little laterally, with a well marked carina, median line moderately impressed, both transverse impressions deep, hind one longitudinally striate, basal foveæ fairly deep, with one or two transverse striae, surface vaguely transversely striate, basal area uneven. *Elytra* convex, oval, but with well marked shoulders, rather more than a half wider than prothorax, a half longer than wide, sides gently rounded, border reaching stria 5; striate-punctate, the inner striae faintly impressed, the outer ones formed by the fine punctures, 1 moderately deep behind, 5 to 7 very faint, but traceable throughout, scutellary striole short, apical stria fairly deep, joining 7 intervals flat, dorsal pores very distinct, a slight tubercle in front of each. Microsculpture of the elytra formed by meshes on average three times wider than long, both head and prothorax are practically without microsculpture. Metasternal process bordered at sides only.

Length, 5.5-6 mm

Distribution TIBET: Jikkyop (R. W. G. Hingston)

Type in the British Museum

Nearly allied to *B. amnicola* Sahlb from Central Asia, but the pale, wide, elytral border reaches the base, the base of the prothorax is impunctate the striae on the elytra are hardly impressed, and the punctures are much finer.

381. *Bembidion sillemi*, Net

Bembidion sillemi Netolitzky *, Att. Mus. Civ. Trieste, xii, 1931, p. 92; id., in Visser, Karakorum, i, 1935, p. 273

Colour piceous beneath, upper surface dark rufous, palpi, the three and a half basal joints of the antennæ (rest fuscous), and the margin of the elytra from stria 4 outwards ferruginous. These are the colours of the type, in the other three examples the head and prothorax are dark blue and the pale parts are flavous, while the dark central stripe on the elytra is vaguely dilated behind middle.

Head with fairly deep parallel furrows; eyes moderately prominent, antennæ reaching basal fourth of elytra, surface impunctate, with a small central pore on vertex. *Prothorax* cordate, convex, a third wider than head, and about as much wider than long, base slightly arcuate, as wide as apex, sides well rounded in front and sinuate a little before base, hind angles right, sharp, projecting slightly laterally, with the merest trace of a carina, median line very fine, transverse basal sulcus slight, the foveæ small and deep, the basal area finely punctate. *Elytra* convex, oval, the shoulders well marked, rather more than a half wider than prothorax, nearly two-thirds longer than wide, border rounding shoulder

and extending inwards to stria 5, punctate-striate, the striae moderately impressed on disk and clearly punctate near base, 1 deep to apex, the rest disappearing at about four-fifths, 8 very deep, joining marginal channel behind shoulder, scutellary striole and apical stria both clearly marked; intervals moderately convex on disk only, the two dorsal pores adjoining stria 3. The microsculpture of the elytra is formed by a reticulation of very wide meshes, hardly visible on the disk of the prothorax. The metasternal process is widely and rather finely bordered.

Length, 5-6 mm

Distribution KASHMIR Srinagar (*J. A. Sillem*), Sind Valley, Kangan and Gund (*L. Caporiacco*)

Type in the Zoological Museum, Amsterdam

382 *Bembidion babaulti*, Andr [Plate IV, fig 5]

Bembidium babaulti Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 80, t 1, f 7, id, Ent Month Mag 1926, p 67

Bembidion babaulti Jedlička, Acta Soc ent Cech xxx, 1933, pp 5 and 14, Netolitzky, Att Mus Civ Trieste, xii, 1934, p 93

Colour black, shiny, head and prothorax metallic green, elytra with the basal half light or dark brown, the apical fourth dirty white, a piceous fascia separating the two parts, palpi and legs flavous, joints 1 to 4 of antennæ almost entirely ferruginous.

Head with deep parallel uneven furrows, diverging behind, eyes rather prominent, antennæ slender, reaching basal fourth of elytra, one or two minute punctures at sides behind. *Prothorax* convex, cordate, a fifth wider than head, a third wider than long, base truncate, slightly wider than apex, sides rounded in front and sinuate close to base, the hind angles sharply rectangular and sometimes projecting a little laterally, with a short but distinct carina, median line and front transverse impression slight, hind impression and basal foveæ fairly deep, base very clearly punctate, one or two punctures near the front margin. *Elytra* convex, ovate, with well-marked shoulders, three-fifths wider than prothorax, a little more than a half longer than wide, border reaching stria 5, striae rather lightly impressed, finely and clearly punctate, a little shallower at sides, very faint, though quite visible, on apical third, 1 moderately deep throughout, scutellary striole and apical stria both moderately developed; intervals a little convex on disk only, dorsal pores small. Microsculpture of the elytra formed by extremely fine transverse lines, visible only under the microscope, none on prothorax.

but some isodiametric meshes are visible on head Meta-sternal process bordered

Length, 3 5-4 5 mm

Distribution KASHMIR Jhelum Valley, Garhi, 4000 feet (*L Caporiacco*) JAMMU Udhapur, Batota (*C. F C Beeson*). PUNJAB. Simla (*N Annandale*), Fagu and Gahan (*S N Chatterjee*), Murree, Thobba (*H. Roberis*), Dharmasala, Triun, and Seraj, Jhibi (*H. G. Champion*); Kulu, Mandi (*G. Babault*), Kangra Valley UNITED PROVINCES. Naini-Tal, West Almora, Sunderdhunga Valley, Sarda River Gorge, and Gori River Valley and Gorge (all *H. G Champion*); Dehra Dun (*M Cameron*), Mussooree, Anarwala, Dhabalwala, Binsar, Bhowali (*A D Imms*), Jaunsar, Bear Garden, and Deoban (*H. G Champion*), Binal Gad (*S. N. Chatterjee*) CHINA. Szechuen

Type in the British Museum

A common species met with at elevations varying from 2000 to 9000 feet

383 *Bembidion parkeri*, sp nov

Colour black, head and prothorax dark blue; palpi, joints 1 and 2 of antennæ, with basal half of joints 3 and 4, legs, and the apical border of elytra ferruginous, an oblique apical spot on each elytron flavous, basal third of elytra vaguely dark red

Head with fairly deep, parallel furrows; eyes moderately prominent, antennæ reaching basal third of elytra, surface impunctate Prothorax convex, cordate, a fourth wider than head and as much wider than long, base very little wider than apex, sides rounded in front and sinuate close to base, hind angles sharply rectangular, with a slight carina, median line fine, front transverse impression very shallow, impunctate, basal foveæ fairly deep, basal area vaguely rugose punctate Elytra moderately convex, ovate, two-thirds wider than prothorax, a half longer than wide, shoulders square, border reaching a point half-way between striae 4 and 5, rather lightly punctate-striate, 1 deep to apex, the other striae evanescent from apical fourth, 2 fairly deep close to apex, 8 deep behind, joining marginal channel behind shoulder, apical stria and scutellary striae both present; intervals slightly convex, dorsal pores adjoining stria 3. Microsculpture of the elytra formed by very wide meshes, none on disk of prothorax Sternum · metasternal process bordered

Length, 4 5 mm

Distribution BASHAHR · Sangla, 8000 feet, 23-24. v 1928 (*R N Parker*)

Type in the British Museum I have seen no other example
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384 *Bembidion atalanta*, sp. nov.

Colour piceous, shiny; head and prothorax metallic green; palpi, joints 1 to 4 of antennæ, legs, and apical third of elytra flavous, basal half of elytra brown, the two parts separated by a piceous band, widening at sides, and produced a little at middle behind, though interrupted by the sutural intervals

Head convex, small, with deep furrows, which diverge a little behind, eyes moderately prominent, antennæ nearly reaching middle of elytra, one or two punctures on each side behind. *Prothorax* convex, cordate, a fourth wider than head and as much wider than long base truncate, but slightly oblique close to the angles, a little wider than apex, sides rounded and gently sinuate near base, the hind angles sharp but slightly obtuse, with a small carina, median line and transverse impressions rather shallow, basal foveæ small, but fairly deep, a little removed from the angles, basal area finely and rather vaguely punctate. *Elytra* convex, ovate, but with evident shoulders, a half wider than prothorax and fully two-thirds longer than wide, border reaching stria 5, rather finely punctate-striate, 1 deep throughout, the outer striae shallower, and 2 to 7 much shallower behind, though 2 is quite distinct close to apex, scutellary striole rather slight, apical stria deep, intervals a little convex on disk, dorsal pores small but distinct, adjoining stria 3. Microsculpture of the elytra reticulate, the meshes very wide, none on disk of prothorax or middle of head, but there are some isodiametric meshes on the neck.

Length, 4.6 mm

Distribution KASHMIR Lianmarg, 10,000 feet (*M Cameron*).

Type in the British Museum The type is the only example seen.

This species might at first sight be mistaken for a large, immature example of *babaulti*, from which it is readily distinguishable by the character of the elytral microsculpture.

385 *Bembidion fuscicerus*, Motch

Bembidium pictum Faldermann (not Dufts), Mém Acad St. Petersb II, 1835, p 357, Motchulsky, Ins Sib 1844, p 243, Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 16

Bembidium maritimum Motchulsky (not Stephens), Kaf Russl 1850, p 11

Bembidium lucidum Mannerheim (not Lec.), Bull Mosc 1853, II, p 150.

Bembidium fuscicerus Motchulsky, Études Ent IV, 1855, p 79
(nom nov for *lucidum* Mannh.)

Bembidium mixtum Leconte, List Col N Amer I, 1863, p 14

Bembidium repandum J Sahlberg, Not Sälsk Fauna Flora Fenn XIV, 1874, p 78

- Bembidion fuscicrum* Hayward, Trans Amer. Ent. Soc. 1897, pp 75 and 81
Bembidion cibrulum Netolitzky, Wien Ent Zeit 1910, p 217 (nom nov for *maritimum* Motsch)
Bembidion fuscicrum Netolitzky, Kol Rundsch 1918, p 25, Müller, Kol Rundsch 1918, p 90
Bembidion fuscicrus var *turanicum* Csiki, Col Cat Carab pars 97, 1928, p. 97 (nom nov. for *pictum* Fald); Netolitzky, Att Mus Civ Trieste, xii, 1934, p 92, id, in Visser, Karakorum, 1935, p 271
Bembidion pictum Andrewes, Trans Ent Soc. Lond 1930, p 3; Netolitzky, Ark Zool 27 A, 18 Col 4, Carab 1934, p 21
Bembidion fuscicrus Andrewes, Mem Conn Acad x, 1934, p 24.

Colour piceous; head and prothorax dark green or blue; palpi, antennae, legs, elytra, propleura, and epipleura flavous to ferruginous, the elytra with a dark vitta along the suture, which often expands just behind middle into a more or less rhomboidal spot, sometimes reaching the margins. Occasionally the penultimate joint of palpi, apex of antennæ, femora, and apex of elytra are more or less infusate.

Head convex, with fairly deep, somewhat rugose furrows; eyes not prominent, antennæ stout, reaching basal fourth of elytra, one or two minute punctures at sides of vertex. Prothorax convex, cordate, a fifth wider than head, a fourth wider than long, extremities equally contracted, sides rounded, sinuate close to base, hind angles sharply rectangular, with a distinct carina, median line rather shallow, foveæ deep, basal area depressed, finely rugose-punctate. Elytra flat, ovate, though with evident shoulders, fully a half wider than prothorax, three-fifths longer than wide, border reaching stria 5, striæ very finely punctate, lightly impressed, the outer ones very lightly, 1 fairly deep throughout, 2 visible to apex, the rest disappearing a little before apex, scutellary striole and apical striole both rather slightly developed, intervals nearly flat, dorsal pores distinct. The microsculpture of the elytra is formed by isodiametric meshes, and similar meshes are visible on the neck, but the rest of the head and the disk of the prothorax are without any.

Length, 4-5 mm

Distribution KASHMIR. Baltal, Leh, Mulbeck, and Nuria, all in Ladakh; Salt Lake, Tsho-Morari, and Nima-Mud, all in Rupshu (all *G. Babault*), Kargil and Rongo (*F. Stoliczka*). TIBET. Tuna, Kampa Dzong, Lingga, Tinki Dzong, Kyishong, Shekar, Pangle, Tashidzom, Chodzong (all *R W G Hingston*), Indus Valley, Tolti, 8000 feet, and Skardu, 10,700 feet, Shigar Valley, Shigar, 7400 feet, and Alchori, 7800 feet; Braldo Valley, Hoto, 9700 feet, Chongo, 10,000 feet, and Askole, 10,500 feet, Biaho Valley, Korophon, 10,300 feet, and Paju, 11,700 feet, Punmah Valley, Tsok, 11,600 feet (all *L Capriacco*); Pangur Tso, 14,200 feet, and Tso-Nyak region, 14,300 feet

(*G. E. Hutchinson*) ; Khardong and Lower Shyok (*J. A. Sillem*) TURKESTAN MONGOLIA SIBERIA UNITED STATES (including Alaska). CANADA

Like most widely spread species, this one exhibits a good deal of variability, especially in the pattern on the elytra. In North American specimens the elytra are mainly flavous, but in those from Central Asia, Tibet, and Kashmir the piceous colour covers a good deal more of the surface (var. *turanicum* Csiki), and sometimes the elytra appear to be mainly piceous (var. *corporale* Net.), with two pale spots on each. The isodiametric meshes on the elytra at once distinguish the species from all its congeners in this group.

386 *Bembidion psilodorum*, Andr.

Bembidion psilodorum Andrewes, Ann Mag Nat Hist (10) xi, 1933, p 412, Netolitzky, in Visser, Karakorum, i, 1935, p 272

Colour black, head, prothorax, and sometimes elytra with greenish reflections, joints 1 and 2 of antennæ, with basal half of joints 3 and 4, tibiae, and tarsi flavous, rest of antennæ, penultimate joint of palpi, and (generally) basal two-thirds of femora fuscous, elytra each with a vague dark red humeral and sometimes also an apical spot (both present in the type and joined along interval 6).

Head with fairly deep, rather smooth, parallel furrows, extending on to clypeus, eyes flat, antennæ reaching basal fourth of elytra, one or two fine punctures at sides of vertex. Prothorax convex, cordate, a fourth wider than head, only a sixth wider than long, base a shade wider than apex, sides rounded in front and sinuate at about a fourth from base, hind angles sharply rectangular, with a well developed carina, median line very fine, front transverse impression quite distinct and bearing a few fine punctures, hind one and basal foveæ fairly deep, basal area finely and fairly closely punctate. Elytra convex, ovate, nearly two-thirds wider than prothorax, a half longer than wide, shoulders square, border reaching stria 5, rather lightly punctate-striate, 1 deep to apex, the rest evanescent from about middle, but the very fine punctures on all just visible practically to apex, 8 deep behind, joining marginal channel behind shoulder, the outer striae, except close to base, formed by the punctures, apical stria and scutellary striae both present, but rather slight, intervals nearly flat, dorsal pores adjoining stria 3. No visible microsculpture. Sternum metasternal process bordered.

Length, 4.5–4.75 mm.

Distribution KASHMIR Lidar Valley, Pahlgam, 7000 feet, 7 vi 1928, and Frishna, 8000 feet, 11 vi 1928 (C F C)

Beezon), and Lidar Wat, 9000 feet, 12 vi. 1928 (B. M. Bhatia), Jhelum Valley, Gulmarg, 8500 feet, 4 vi 1928 (C. F. C. Beezon), Sind Valley (J. A. Sillem).

Type in the British Museum, co-types in the Forest Research Institute, Dehra Dun, and in my collection

Key to the radians-group

- 1 (4) Micro-sculpture present on both elytra and prothorax
 - 2 (3) Surface dull, colour dark bronze, micro-sculpture very distinct, iso-diametric throughout, elytra oval, the shoulders rounded away, the striae very fine and faintly impressed. Length 4 mm
 - 3 (2) Surface shiny, elytra blue, micro-sculpture of the prothorax reticulate but faint, that of the elytra formed by excessively fine transverse lines; elytra olate, the shoulders rather square, the striae punctate and moderately impressed. Length 5.5 mm
 - 4 (1) Micro-sculpture wanting (small convex greenous or greenish species of 3-4 mm. in length)
 - 5 (6) Base of antennae and femora ferruginous; antennae submoniliform, the joints twice as long as wide.
 - 6 (7) Head punctate at sides of vertex, prothorax a hair wider than long, its base a little wider than apex, elytral striae with the punctures distinct, at least near base
 - 7 (6) Head impunctate, prothorax a fourth wider than long, its base a little narrower than apex, elytral striae indistinctly punctate
 - 8 (5) Base of antennae and femora black or piceous
 - 9 (10) Antennae long and filiform, the joints three times as long as wide, elytral striae distinctly impressed, at least on disk, stria 7 visible, and an apical stria present
 - 10 (9) Antennae submoniliform, the joints twice as long as wide; elytral striae hardly impressed, formed almost entirely by the fine punctures, stria 7 and apical stria both wanting, the apical pore isolated
- [p 182.]
cymindulum, Andr.
- [p 183.]
endymion, sp. nov.,
- [p 184.]
radians, Andr., p. 184
- [p 185.]
charon, Andr., p. 185.
- [p 186.]
pachrum, Andr.,
- [p 187.]
algidum, sp. nov.,

387 *Bembidion cymindulum*, Andr

Bembidion cymindulum Andrewes, The Carabidae of the Third Mount Everest Expedition, 1924, Trans Ent Soc Lond 1930, pp 3 and 13

Colour piceous, upper surface very dark bronze
 Head with moderately deep, parallel furrows, eyes flat, antennæ rather stout, reaching basal fourth of elytra, surface impunctate Prothorax moderately convex, cordate, a sixth

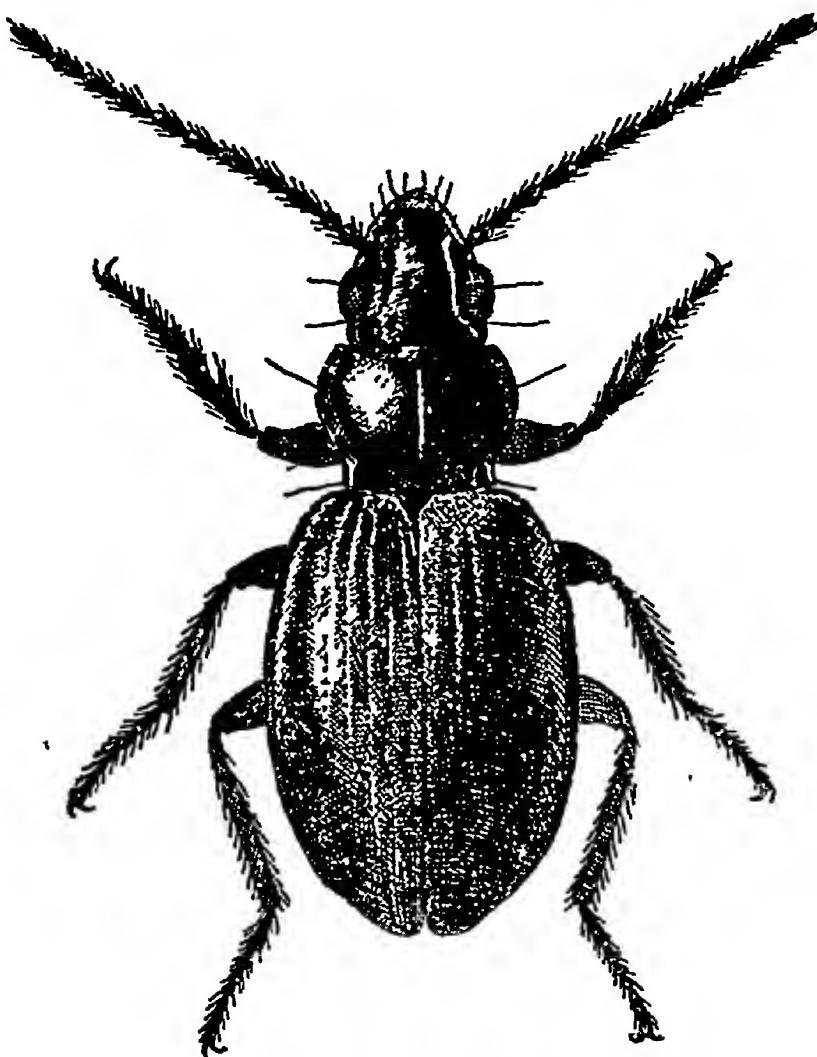


Fig 27 — *Bembidion cymindulum* Andrewes

wider than head, a third wider than long, equally contracted at extremities, sides moderately rounded in front and sinuate not far from base, hind angles sharply rectangular, projecting a little laterally, without carina, median line moderately impressed, front transverse impression very shallow, hind one fairly deep, as are the basal foveæ, which adjoin the hind angles, disk vaguely, basal area more strongly, irregularly striate, but not punctate Elytra somewhat depressed, oval,

the shoulders practically rounded away, three-fifths wider than prothorax, a half longer than wide, sides rather strongly rounded, border reaching stria 5, bent back slightly at its extremity, but not angulate, punctate-striate, the striae (except 1) only impressed, and then very lightly, on middle of disk, the punctures faint, the outer striae very vaguely indicated, scutellary striole very short, apical stria fine but fairly distinct, intervals flat, sutural one somewhat raised, dorsal pores adjoining stria 3, the front rather more conspicuous than the hind one. Microsculpture isodiametric and very pronounced, though rather less conspicuous on the head and prothorax than on the elytra, some of the meshes on the prothorax a little wider than long. Metasternal process unbordored, a slight transverse impression behind it.

Length, 4 mm.

Distribution TIBET, Kyetrak, Phuse La (R. W. G. Hingston).

Type in the British Museum

A very isolated form, apparently without any near allies

388. *Bembidion endymion*, sp. nov.

Colour piceous, upper surface shiny, the head and prothorax very dark green, elytra blue; palpi, joint I of antennæ, and legs ferruginous

Head with moderately deep, uneven furrows, evidently diverging behind, only vaguely continued on to clypeus, eyes rather prominent, antennæ reaching basal fourth of elytra, vertex with some very fine punctures and a pore at middle. *Prothorax* convex, cordate, a fifth wider than head, a third wider than long, base a little wider than apex, sides rounded in front, sinuate near base, hind angles sharply rectangular, with rather a slight carina, median line moderately deep, front transverse impression slight, basal foveæ fairly deep, the whole basal area depressed and vaguely punctate. *Elytra* convex, ovate, a little pointed at apex, nearly twice as wide as prothorax, about three-fifths longer than wide, shoulders rather square, border reaching a point opposite stria 5, moderately punctate-striate, the outer striae formed by the punctures, 1 deep to apex, the others evanescent at apex, 7 and scutellary striole very fine, 8 deep behind, joining marginal channel behind shoulder, apical stria faint, so that the pore is conspicuous, sutural interval a little raised, the rest flat, two dorsal pores adjoining stria 3. The microsculpture of the elytra is formed by extremely fine transverse lines, visible only under the microscope, on the prothorax it is reticulate but very faint. *Sternum*. metasternal process unbordored

Length, 5.5 mm

Distribution UNITED PROVINCES Haldwani district (*H. G. Champion*).

Type in the British Museum. This is the only specimen I have seen

The upper surface is extraordinarily like that of *phædrum*, but the blue of the elytra is a shade brighter, the elytra are larger compared with the head and prothorax, the striae are less impressed, the apical stria very faint, the surface with a more evident gloss. The lack of a border on the metasternal process and the obsolescence of the apical striae are both unusual in conjunction with the other characters, possibly the unique specimen is aberrant in these respects.

389 *Bembidion radians*, Andr.

Bembidion radians Andrewes, Ent Month Mag 1922, p 177;
id, Ent Month Mag 1926, p 67.

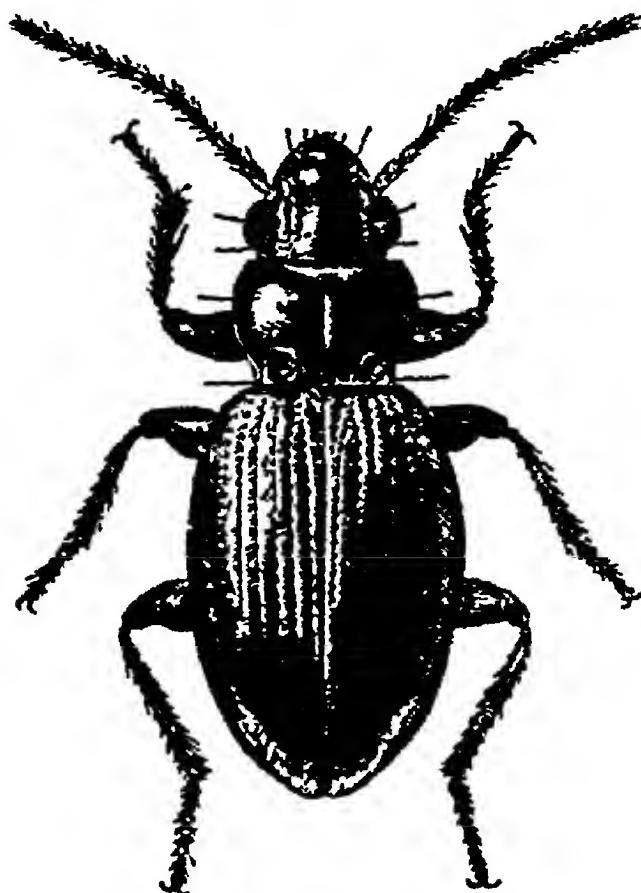
Bembidion radians Andrewes, Trans Ent Soc Lond 1930, p. 3

Colour black, with brassy reflections, very shiny; upper surface dark bronze, sometimes greenish, joints 1 and 2 of antennæ, with base of 3 and 4, apical joint of palpi, and legs dark red, tibiae a little lighter.

Head with moderately deep, parallel furrows, neck wide, eyes rather flat, antennæ stout, hardly reaching basal fourth of elytra, a few small punctures behind. Prothorax convex, cordate, a fourth wider than head and fully a third wider than long, base truncate, slightly narrower than apex, sides gently rounded and sinuate at about a fourth from base, hind angles sharply rectangular, with a well developed carina, median line fairly deep at middle, front transverse impression deep at sides, basal foveæ deep, adjoining the angles, base somewhat depressed and moderately punctate, a few punctures generally extending forwards along sides and median line, one or two sometimes on disk. Elytra convex, oval, shoulders rounded, two-fifths wider than prothorax, rather more than a half longer than wide, border not quite reaching stria 5; punctate-striate, both striae and punctures moderately deep on disk, rather faint at sides and behind, 1 deep throughout, 2 a little deeper than 3 to 5, joining 1 at apex and moderately deep at that point, scutellary striae short, apical stria fairly deep, joining 5; intervals moderately convex on disk, flat elsewhere, dorsal pores large. No microsculpture on elytra or prothorax, some isodiametric meshes visible on neck. Metasternal process unbordered, or with a rudimentary border only.

Length, 3.6-4 mm

Distribution. PUNJAB : Simla Hills, Baghi above Kufri, and Narkanda (*S. W. Kemp*) ; Suttoo (*H. G. Champion*). BASHAHR. Khadrala (*R. N. Parker*). UNITED PROVINCES : West Almora, Sunderdhunga Valley, Pindar Valley, Naini Tal, Ranikhet, Bhatkot, Gori River Gorge (*H. G. Champion*).



- Fig 28.—*Bembidion radians* Andrewes

BENGAL : Darjeeling ; Gopaldhara SIKKIM . Lachung, Karponang, and Tonglu (*H. Sterens*) ; Phadamchen, Gnatong, and Tangu (*R. W. G. Hingston*) TIBET . Jelep La, Yatang, Gautsa, Phari, and Rongshar Valley (*R. W. G. Hingston*)

Type in my collection

In the Simla examples the legs are lighter in colour and the upper surface has a distinct greenish tinge.

390 *Bembidion charon*, Andr.

Bembidium charon Andrewes, Ent Month. Mag 1926, pp 67 and 74

Colour piceous, upper surface dark æneous ; joints 1 and 2 of antennæ, with basal half of 3 and 4 base of palpi, and legs ferruginous , rest of antennæ and penultimate joint of palpi fuscous

angles sharply rectangular, with a small carina, median line fine, front transverse impression distinct at sides and containing a few fine punctures, hind one and basal foveæ fairly deep, surface smooth and shiny, the basal area sparsely punctate. Elytra convex, oval, two-thirds wider than prothorax, rather more than a third longer than wide, shoulders rounded away, border reaching stria 5; finely striate-punctate the striae evanescent behind, hardly impressed, except 1, which deepens towards apex, 8 very deep joining marginal channel behind shoulder, shallower behind, where it curves round and joins 1, 7, scutellary striae, and apical stria all obsolete, the apical pore practically isolated; intervals flat, 3 with two small pores adjoining stria 3. Surface shiny, without microsculpture. Sternum metasternal process with only a suggestion of a border, but with a depression behind it.

Length, 3-3 4 mm

Distribution KASHMIR Gulmarg, Jhelum Valley, 8000-9000 feet (C F C Beeson and M. Cameron), Khelanmarg, 11,000 feet (C F C Beeson).

Type in the British Museum, co-types in the Forest Research Institute, Dehra Dun, and in my collection

Key to the varium-group.

1 (6) Elytra with the apical stria wanting and the pore consequently isolated, no microsculpture present

2 (5) Elytra normally striate, the dorsal pores clearly placed on interval 3. Length 2 5-3 1 mm

3 (4) Elytra with a tessellated pattern of light and dark patches, the carina in the hind angle of the prothorax rudimentary ...

4 (3) Elytra uniformly rufous or blue, the carina in the hind angle of the prothorax short but distinct . . .

5 (2) Elytra abnormally striate, striae 3 to 7 represented by punctures near the shoulders only, the surface otherwise smooth, the position of the dorsal pores indeterminate, colour black. Length 3-3 5 mm . . .

6 (1) Elytra with the apical stria present.

7 (10) No microsculpture present, elytra with rounded shoulders, colour rufous, with a faint pale spot near the apex of each. Small rufous species of 3-3 5 mm in length

8 (9) Upper surface rufous, prothorax with the base distinctly punctate, a large shallow pore on each side of disk in front, elytra with the shoulders present, though rounded. Length 3 5 mm . . .

[p 189.
latiplaga, Chaud.,

eupages, Andr., p 190.

[p 192
lessonotum, sp nov.,

[p 193
leptaleum, Andr.,

BEMBIDIION.

- 9 (8) Upper surface piceous, with greenish reflections; prothorax with the base only vaguely punctate, the disk without pores; elytra with the shoulders practically rounded away. Length 3-3.5 mm. *infans*, Andr., p. 195;
- 10 (7) Microsculpture present; elytra with the shoulders quite evident, though sometimes a little rounded, either with a pattern present or at least a conspicuous pale apical spot on each. Larger species, of 3.75-5 mm. in length.
- 11 (12) Antennae with joint 1 dark ferruginous; elytra with the striae entire, their colour greenish-black, with irregular, tessellated fasciae; the microsculpture reticulate, formed by very wide meshes. Length 4-5 mm. *terium*, Oliv., p. 195.
- 12 (11) Antennae with joints 1 and 2 pale ferruginous; elytra with the striae evanescent at sides, their colour black, each with a pale mark towards apex; microsculpture formed by very fine transverse lines, visible only under the microscope.
- 13 (14) Legs mainly piceous; each elytron with a pale, slightly transverse spot near apex; antennae stout; prothorax neither with the lateral channels widening nor with the margin strongly reflexed behind, the base distinctly punctate. Length 4-5 mm. [p. 197.
erythrum, Andr.,
- 14 (13) Legs ferruginous; each elytron with a pale, comma-shaped spot near apex; antennae slender; prothorax with the lateral channels widening and the margin strongly reflexed behind, the base indistinctly punctate. Length 3.75-4 mm. *expido*, sp. nov., p. 198.

393. *Bembidion latiplaga*, Oliva.

Bembidion latiplaga Chaudoir *, Bull. Musc. 1850. II, p. 185; Ganglbauer, Käf. Mittelerr. J. 1893, p. 167; Bedel, Cat. ratis. Col. N. Africa I, 1895, pp. 61 and 68; Andreev, Rec. Ind. Mus. xviii, 1919, p. 100.

Bembidion quadrripunctatum Schaufuss, Verh. zool.-bot. Ges. Wien, xxxi, 1881 (1882), p. 621; Netolitzky, Ent. Blät. 1914, p. 55 (tetrapunctatum).

Bembidion latiplaga Müller, Biol. Rundsch. 1918, p. 112.

Colour piceous, shiny, upper surface with green or blue metallic reflections; elytra each with a large vague humeral patch and the apex reddish, a large round apical spot, covering intervals 4 to 5, flavous; palpi joints 1 to 4 of antennae, and legs mainly ferruginous, penultimate joint of palpi and femora darker.

Head with short, deep furrows, converging slightly in front; eyes moderately prominent; antennæ submoniliform, reaching basal fourth of elytra, surface practically impunctate. *Prothorax* convex, cordate, hardly wider than head, a fourth wider than long, base with its sides very oblique, slightly narrower than apex, sides strongly rounded in front, sinuate quite close to base, the hind angles projecting a little on each side as a sharp rectangular tooth, without, or with only a rudimentary carina; median line faint, basal foveæ small but deep, near the angles, base depressed, with few but coarse punctures. *Elytra* convex, ovate, but with well marked shoulders, fully a half wider than prothorax, a half longer than wide, border extending inwards to a point a little beyond the base of stria 5, a clavicular fold present; striæ moderately deep on disk, very clearly punctate, faint and hardly impressed at sides, evanescent towards apex, 1 deep throughout, 2 just visible to apex, scutellar striae rather short, apical stria obsolete, the pore consequently isolated, intervals a little convex on disk only, dorsal pores small, on the interval. No microsculpture.

Length, 2 5–3 mm

Distribution PERSIA Seistan, Labi Baring, and Nasratabad (S. W. Kemp). MEDITERRANEAN LITTORAL RUSSIA SIBERIA

Type in Mr Rene Oberthur's collection.

The Seistan examples differ a little from the typical Mediterranean form, being a little more stoutly built and of a rather brighter greenish tint but they are similar in other respects

394 *Bembidion eupages*, Andr

Bembidion eupages Andrewes, Mem. Conn Acad x, 1934, pp 25 and 27

Bembidion moroticum Netolitzky (not Kolenati), Att Mus Civ Trieste, xii, 1934, p 99, id, in Visser, Karakorum 1, 1935, p 275 (?)

Colour black beneath, upper surface æneous or blue and very shiny, palpi, joints 1 to 3 of antennæ (rest fuscous), apex of elytra and venter, trochanters, tibiæ, and tarsi ferruginous.

Head with fairly deep, nearly parallel furrows, converging a little on clypeus, and diverging behind, eyes prominent, antennæ short, submoniliform; surface impunctate. *Prothorax* convex, cordate, slightly wider than head, nearly a third wider than long, base truncate at middle, very oblique at sides, narrower than apex, sides strongly rounded in front and contracted behind, with a rather wide marginal channel, sinuate close to the hind angles, which project on each side

as a small, sharp, though slightly obtuse tooth, bounded by a short oblique carina, within which are the small, deep, rounded foveæ, median line very fine, transverse impressions evident, the hind one with a few deep punctures, and one or two generally transverse punctures along the basal margin, surface otherwise impunctate *Elytra* moderately convex, subquadrate, a half wider than prothorax and a little more than a half longer than wide, shoulders square, border reaching stria 4, striate-punctate, striae 1 and 8 only impressed, the remaining

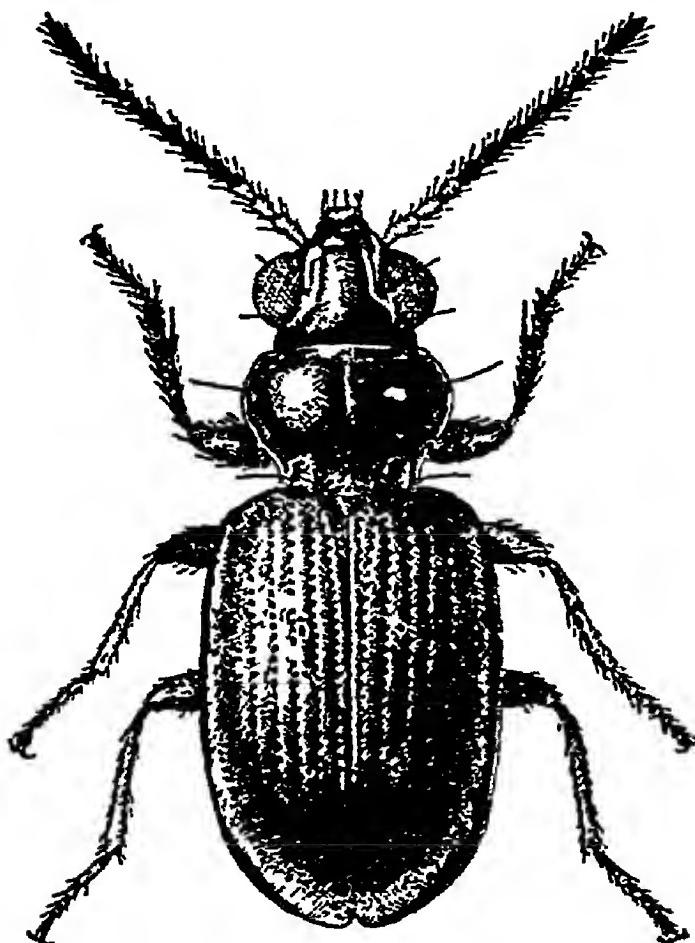


Fig. 30.—*Bembidion eupages* Andrewes

striae formed by the punctures, which are as clearly marked in the outer as in the inner striae, but 2 to 7 all disappear behind, scutellary striae formed by rather large punctures, apical stria wanting, and its pore consequently isolated; intervals flat, 1 raised behind, dorsal pores on interval 3 at about a fourth and three-fifths, a fine clavicular fold present. No microsculpture. Metasternal process bordered, and with a transverse groove behind it.

Length, 2 9-3 1 mm.

Distribution KASHMIR: Lakut Dal Lake, 5200 feet, and Phashakuri, near Pampur, 5200 feet (both G. E. Hutchinson); Srinagar (*L. Capriacco* and *J. A. Sillem*); "Kashmir" (*H. T. Pease*—Indian Museum).

Type in my collection

395. *Bembidion fissonotum*, sp. nov.

Colour black very shiny; base of femora, trochanters, and coxae dull red.

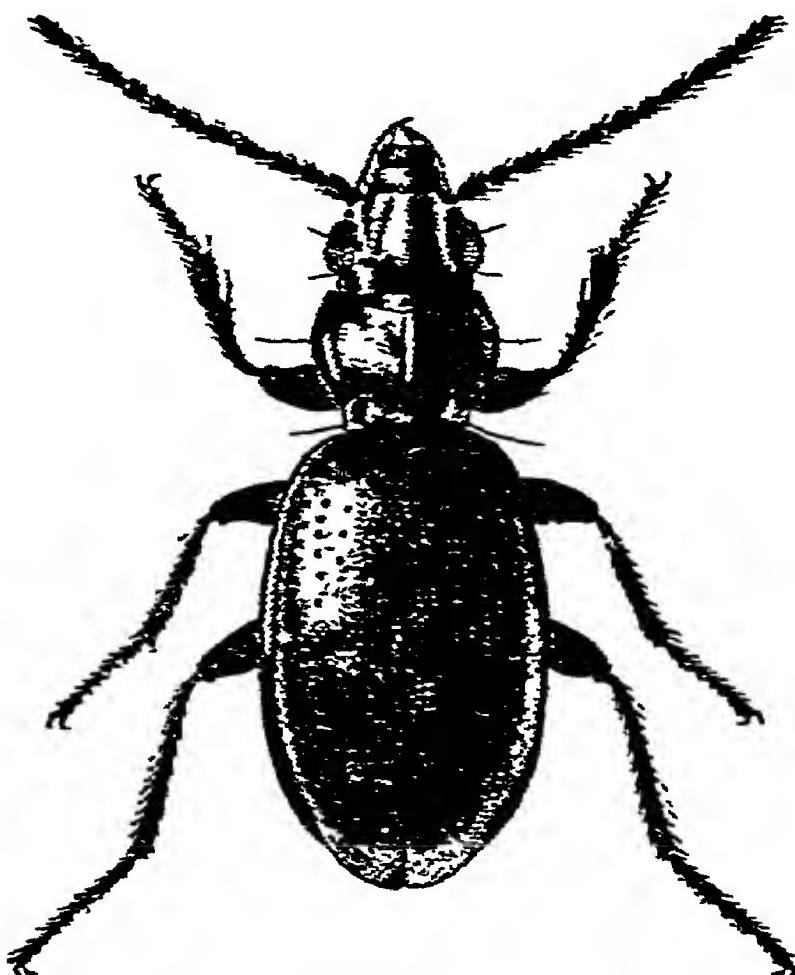


Fig. 31.—*Bembidion fissonotum*, sp. nov.

Head with fairly deep, regular furrows, diverging slightly behind; eyes flat; genæ very short; antennæ submoniliform, fully reaching basal third of elytra; surface impunctate. Pro'horax subconvex, cordate, about a fourth wider than head, a third wider than long, apex evidently wider than base, which is rather strongly and arcuately produced at middle, the sides oblique and a little emarginate, sides well rounded in front and sinuate just before the hind angles,

which stand out on each side as a small, sharp, rectangular tooth, a short carina present in each angle, the pores from which the two lateral setæ spring unusually clear, median line very fine, front transverse impression slight, hind one and basal foveæ fairly deep, disk smooth, the transverse basal impression crenulate. Elytra convex, oval, separately rounded at apex and with a small re-entrant angle, about two-thirds wider than prothorax, nearly a half longer than wide, border reaching a point opposite stria 5, a vague channel, deeper at each end, running round the middle of base, with a few punctures behind it, striae 8 and 9 lie together in the wide marginal channel and join behind shoulder, where there are a few large punctures, one or two smaller ones lying along the course of the channel, this becomes very shallow behind and rounds apex, joining stria 1, which is faintly impressed at that point, otherwise striae 1 and 2, the scutellary striae and the apical stria are all wanting, the apical pore being consequently isolated, striae 3 to 7 are represented by punctures only, few and small on 3 and 7, fairly large on 4 to 6, hardly extending beyond middle, except under microscopic examination, and none reaching base, as all the punctures are faintly aciculate in front and open behind as no setæ are present, and as the position of the punctures varies in the three examples, I am unable to say what dorsal pores are present, or what their position is, the surface is flat, and devoid of microsculpture. Sternum metepisternal process bordered and somewhat crenulate, with an impression behind it.

Length, 3-3.5 mm

Distribution KASHMIR Lolab Valley, Nagmarg, 7500 feet, 19 v 1928 (C F C Beeson—Forest Research Institute, Dehra Dun)

Type in the British Museum. The puncturation of the elytra, as described above, is that seen in the type-specimen, in the other two examples it is considerably reduced and concentrated near the shoulders on striae 4 to 6. I know of no other species bearing any resemblance to this one.

396 *Bembidion leptaleum*, Andr

Bembidium leptaleum Andrewes, Ent Month Mag 1922, p 242

Colour piceous beneath, upper surface æneous, shiny, joints 1 to 3 of antennæ, with basal half of joint 4, palpi (penultimate joint fuscous), apical margin of elytra, and a very small indistinct spot at apical third of each elytron covering intervals 6 and 7, rufous.

Head with shallow furrows, curving outwards to the hind supraorbital pore, a few transverse striae on their inner margins, neck thick, eyes not prominent, antennæ

short, moniliform, reaching very little beyond base of elytra, surface impunctate *Prothorax* convex, cordate, about a fourth wider than head, nearly a half wider than long, base truncate, hardly wider than apex, sides rounded and faintly sinuate close to base, hind angles in the form of a minute rectangular tooth, each with a short but very distinct carina, median line fine, but strongly impressed just in front of base, foveæ deep, the outer part, adjoining the carina, separated from the inner part by a small raised area, base a little depressed, with a few moderate punctures, one or two punctures along front transverse impression *Elytra* convex, oval, about a

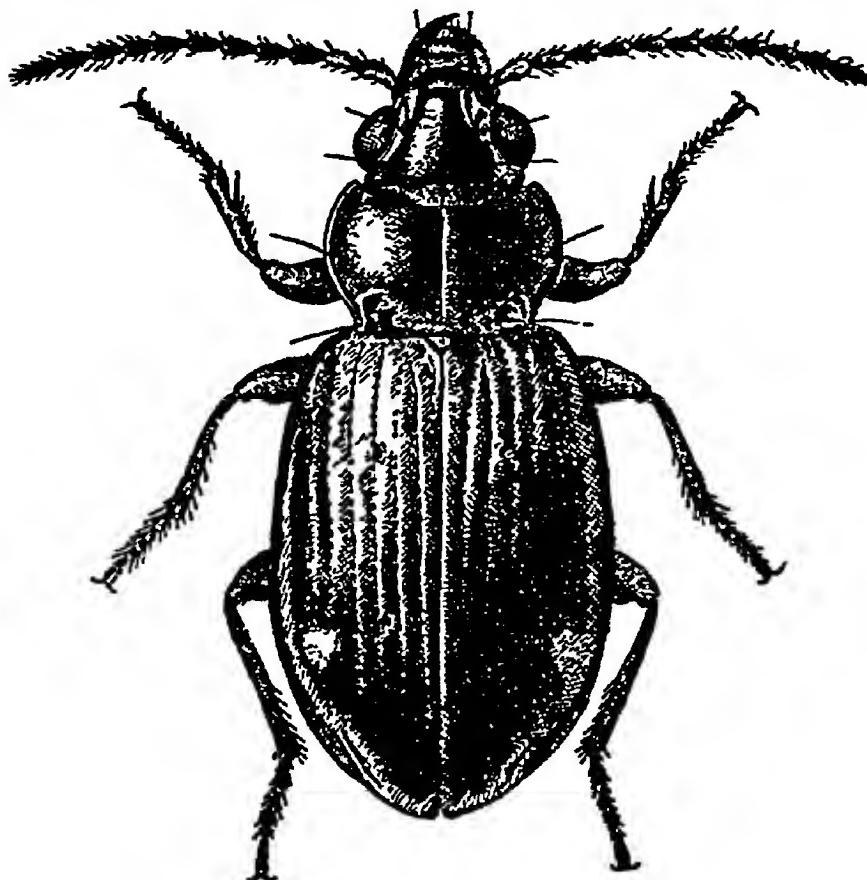


Fig. 32.—*Bembidion leptaleum* Andrewes.

third wider than prothorax, nearly a half longer than wide, border ending in a slight tooth between striae 5 and 6, punctate-striate, the striae rather shallow and evanescent behind, stria 1 deep to apex, where it joins 2, which is deep close to apex only, interval 2 at that point being very wide, apical stria fairly deep and rather long, scutellary striae short, but very deep at base; intervals slightly convex on disk, dorsal pores on the interval, though not very far removed from stria 3, surface a little less shiny than that of the head and prothorax. No micro-sculpture, except for some isodiametric meshes on the neck

Length, 3.5 mm

Distribution SIKKIM. Lachung, 9000 feet (*H. Stevens*).

Type in my collection.

397 *Bembidion infans*, Andr

Bembidion infans Andrewes, The Carabidae of the Third Mount Everest Expedition, 1924, Trans Ent Soc Lond 1930, pp 3 and 14

Colour black, upper surface metallic green, antennal joints 1 and 2, with base of 3 and 4, legs, and a small, barely distinguishable spot near apex of elytra rather dark ferruginous, coxae more or less piceous, rest of antennæ and palpi fuscous

Head with fairly deep, rather smooth frontal furrows, diverging strongly behind, eyes only moderately prominent, antennæ short and stout, moniliform, surface impunctate. *Prothorax* cordate, convex, a fourth wider than head and a third wider than long, base bordered, hardly wider than apex, sides well rounded in front and gently sinuate at about a fourth from base, hind angles sharp, slightly acute, and projecting a little laterally, with a short carina, median line faint, not reaching extremities, front transverse impression shallow, hind one fairly deep, basal foveæ deep, adjoining the angles, surface smooth, with a very few punctures along the course of the hind impression. *Elytra* convex, ovate, the shoulders rounded, a half wider than prothorax and a little more than a half longer than wide, sides gently rounded, the border only reaching a point opposite stria 6, punctate-striate, the striae moderately impressed on disk and disappearing near apex, 1 fairly deep throughout, 2 reaching apex and fairly deep at that point, scutellary striole moderately long, apical stria fairly deep, intervals slightly convex, 3 with two pores on the interval at a third and two-thirds. No micro-sculpture. Metasternal process conspicuously bordered.

Length, 3-3.5 mm

Distribution TIBET Yatang (*R. W. G. Hingston*)

Type in the British Museum.

398 *Bembidion varium*, Oliv.

Carabus varius Olivier, Enc Méth v, 1790, p 358, id, Ent m, 1795, 35, p 110, t 14, f 165

Bembidion varium Bates, Trans Ent Soc Lond 1883, p 269, Ganglbauer, Käf Mitteleur 1, 1892, pp 152 and 159, Andrewes, Rec Ind Mus xviii, 1919, p 100

Bembidion varium Müller, Kol Rundsch 1918, p 60; Andrewes, Mem Conn Acad x, 1934, p 25

Colour piceous, head and prothorax dull bronze-green, elytra with the epipleura and a very variable pattern on the

upper surface flavous, basal joints of the palpi and antennæ, to some extent, and legs dark ferruginous, the femora sometimes with an æneous tinge. The pattern on the elytra consists of a pale spot on each side near shoulder and another near apex, with two irregular fasciæ at a third and two-thirds respectively, sometimes the pale colour extends over a much wider area, and sometimes it almost disappears.

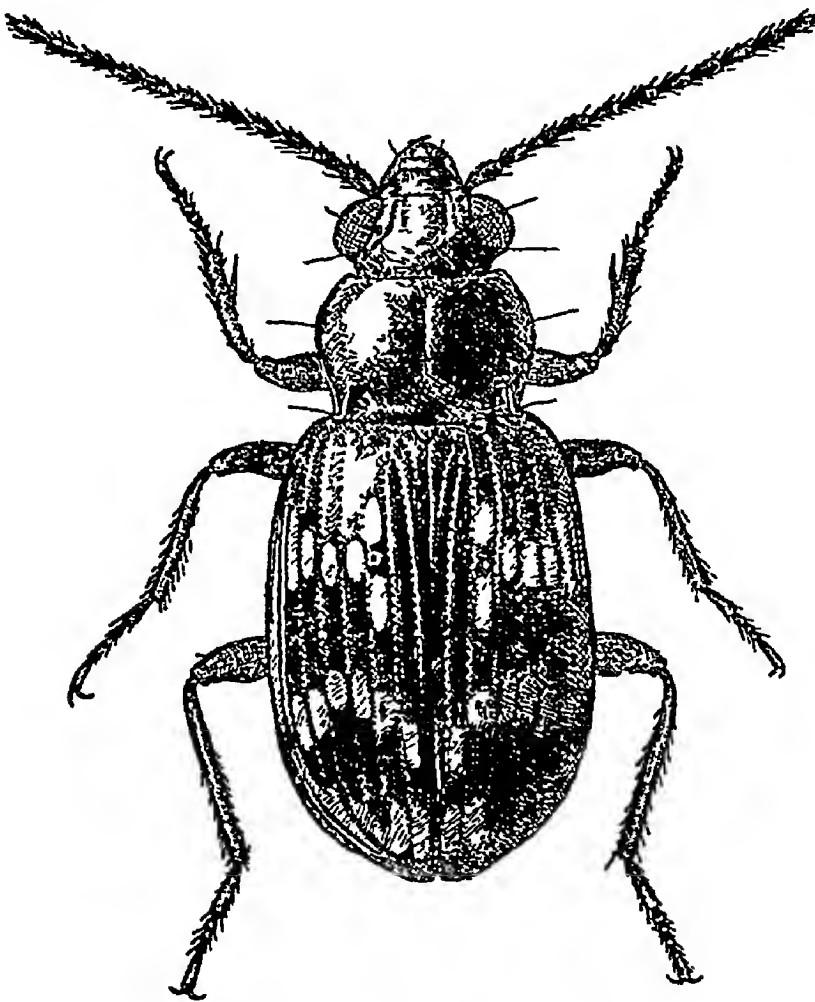


Fig. 33.—*Bembidion varium* Olivier

Head with rather shallow, parallel furrows, eyes moderately prominent, antennæ reaching basal third of elytra, surface impunctate. *Prothorax* convex, cordate, a fifth wider than head and nearly a half wider than long, base truncate, slightly wider than apex, sides rounded in front and sinuate a little before base, hind angles sharply rectangular, with a conspicuous carina, median line very faint, hind transverse impression and basal foveæ moderately deep, the latter at some little distance from the angles, the basal area very vaguely rugose-punctate. *Elytra* moderately convex, about a half wider

than prothorax and as much longer than wide, shoulders marked, sides nearly parallel, border reaching stria 5, punctate-striate, the striae moderately deep on disk, and hardly shallower at sides and behind, scutellary striole and apical stria both moderately developed intervals slightly convex, 1 a little raised, dorsal pores rather conspicuous, on interval 3. The microsculpture of the elytra consists of fine transverse lines, forming wide meshes, that of the head and prothorax is isodiametric and very conspicuous. Metasternal process bordered.

Length, 4-5 mm

Distribution KASHMIR Jhelum Valley, 5000 feet (H. T Pease), Lokut Dal Lake, 5200 feet, and "edge of Phashakuri near Pampur" (?). E. Hutchinson) PERSIA Seistan, Jellalabad (S W Kemp) EUROPE NORTH ASIA NORTH AFRICA

Type not traced

This common and very variable palearctic species just reaches the Himalayas, but does not reach the plains of India. Like other insects with a wide area of distribution, *varium* has been described again and again, but I have not thought it necessary to introduce here the names of its various synonyms and varieties, which can be readily ascertained from a catalogue of palearctic species.

399. *Bembidion exquisitum*, Andr

Bembidion exquisitum Andrewes, Ent Month Mag 1923, p 99
Bembidion exquisitum Jedlicka, Acta Soc. ent Cech xxx, 1932,
 p 47, id, Acta Soc ent Čech xxx, 1933, pp 5 and 15

Colour black, shiny, joints 1 and 2 of antennæ, with base of 3 and 4, and apex of elytra ferruginous; a small apical spot on each elytron flavous, legs piceous or reddish.

Head convex, with moderately deep, parallel furrows, diverging behind, front supraorbital pore large and unusually elongate, eyes not very prominent, antennæ reaching basal third of elytra, surface sparsely and minutely punctate. *Prothorax* convex, subcordate, quite a fourth wider than head, two-fifths wider than long, base truncate, evidently wider than apex, sides gently rounded in front and not much contracted behind, only slightly sinuate before base, hind angles sharply rectangular, each with a well marked carina, median line rather shallow, front transverse impression with one or two coarse punctures at middle, hind one and foveæ deep, basal area coarsely and somewhat rugosely punctate, disk vaguely transversely striate. *Elytra* convex, ovate, but with evident shoulders, fully a half wider than prothorax, a half longer than wide, border hardly extending inwards beyond stria 6, punctate-striate, the striae moderately deep.

on disk and only a little shallower at sides, evanescent near apex, 1 deep throughout and 2 clearly impressed close to apex, scutellary striole rather short, apical stria well marked; intervals moderately convex on disk, 1 raised, 3 with two pores on the interval, slightly removed from stria 3, surface a little depressed behind base Microsculpture of the elytra formed by extremely fine transverse lines, only visible under the microscope, none on prothorax, on the head faint isodiametric meshes can just be distinguished Metasternal process bordered

Length, 4-4.5 mm

Distribution PUNJAB Simla Hills, Kotgarh, 7000 feet (S. N. Chatterjee) UNITED PROVINCES. West Almora (H G Champion) CHINA - Szechuen and Yunnan.

Type in the British Museum

This species does not appear to have any near ally

400 *Bembidion cupido*, sp nov

Colour piceous beneath, black above, shiny and slightly iridescent palpi, joints 1 and 2 of antennæ, with the base of 3 and 4, legs, a spot near the apex of each elytron and another one at apex, the two spots meeting along margin and forming a comma-shaped mark, ferruginous

Head with fairly deep, uneven furrows, extending on to clypeus, where they converge a little, eyes rather prominent, antennæ slender, extending little beyond base of prothorax, surface (chiefly in the type-specimen) with some irregular transverse rugæ on vertex *Prothorax* convex, subcordate, a fourth wider than head, a third wider than long, base bisinuate, evidently wider than apex, sides gently rounded in front and strongly reflexed behind, the marginal channel widening considerably behind, the hind angles projecting on each side as a small but very sharp rectangular tooth, each containing a somewhat oblique carina, median line fine, both transverse impressions moderately deep, basal foveæ deep, basal area finely and vaguely punctate *Elytra* moderately convex, ovate, a third wider than prothorax, two-thirds longer than wide shoulders rather square, border reaching stria 6, punctate-striate, the punctures very clear, only the inner striae impressed, 1 and 2 moderately deep and meeting at apex, 2 a little shallower before apex, the other striae evanescent behind, though not at sides, 8 deep behind, joining the marginal channel behind shoulder, apical stria and scutellary striole both quite distinctly marked, sutural interval raised behind, the other inner intervals slightly convex, dorsal pores on interval 3, placed far forward, a transverse impression on the surface in the vicinity of the front pair.

Microsculpture of the elytra formed by transverse lines barely visible under the microscope ($\times 80$). that of the prothorax quite visible, even on disk, and formed by very wide meshes, on the head isodiametric meshes are just visible Sternum: metasternal process bordered

Length, 3 75-4 mm

*Distribution Assam. Cherra-Punji, 4400 feet, 2-8 x. 1914
(S W Kemp)*

Type in the Indian Museum, Calcutta, co-type in my collection Both specimens are slightly damaged

Key to the niloticum-group.

- 1 (4) Frontal foveæ not widening out on clypeus, colour bronze, with a pale spot at the apex of each elytron, microsculpture isodiametric, very distinct
- 2 (3) Frontal foveæ deeply impressed, elytra moderately shiny, the femora usually more or less dark Length 3 5-4 mm *niloticum*, Dej., p 199
- 3 (2) Frontal foveæ shallow elytra dull, femora pale Length 4-4 5 mm *sobrinum*, Boh., p. 201
- 4 (1) Frontal foveæ widening out on clypeus, no microsculpture present
- 5 (6) Form stout Antennæ reaching basal third of elytra, prothorax with the sides of base oblique, but not emarginate Elytra dark tenebrous, each with a pale vitta Length 3-3 5 mm [p 202.]
- 6 (5) Form slender. Antennæ hardly extending beyond base of the elytra, prothorax with the sides of base both oblique and emarginate Elytra uniform dark metallic green Length 3 mm *immaculatum*, Andr.
- 6 (5) Form slender. Antennæ hardly extending beyond base of the elytra, prothorax with the sides of base both oblique and emarginate Elytra uniform dark metallic green Length 3 mm [p 204.]
- 6 (5) Form slender. Antennæ hardly extending beyond base of the elytra, prothorax with the sides of base both oblique and emarginate Elytra uniform dark metallic green Length 3 mm *capriacorum*, Net.,

401 *Bembidion niloticum*, Dej.

Bembidion niloticum Dejean *, Spec. Gen. Col v, 1831 p 73; Bates, Trans Ent Soc. Lond 1873, p 301, Harold, Deutsch. Ent Zeitschr 1877, p 342, Andrewes, Ann Mag Nat Hist (2) viii, 1912 p 472, id., Rec Ind Mus xviii, 1919, p 100, id., Ent Month Mag 1921, p 249, id., in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 18.

Bembidion hamatum Kolenati, Mel Ent 1, 1843, p 75

Bembidion batesi Putzeys *, Compt rend Soc Ent Belg 1873, p 52, Bates, Trans Ent Soc Lond 1876, p 5. id., Trans. Ent Soc Lond 1883, p 269

Bembidion niloticum Netolitzky, Ent Blätt 1914 p 167; Müller-Kol Rundsch, 1918, p 61, Netolitzky, Wien Ent Zeit. 1931, p 174, f 1; Alluaud Afra 7, 1933, p 3

Bembidion niloticum s. Batesi Jechlka, Acta Soc ent Čech. xxx 1933, pp 3 and 5

Colour piceous, moderately shiny upper surface bronze, sometimes with a greenish tint, palpi (except apex of pen-

ultimate joint), joints 1 to 4 of antennæ, and legs more or less ferruginous (femora sometimes piceous); apex of elytra, and an apical lateral spot on each, the spots often merging to form a crescent, flavous

Head rather convex, with deep, nearly straight furrows, converging strongly in front, running on each side from the back of the eye to the front margin of the clypeus, eyes prominent, antennæ stout, reaching basal third of elytra, surface impunctate *Prothorax* convex, cordate, about a

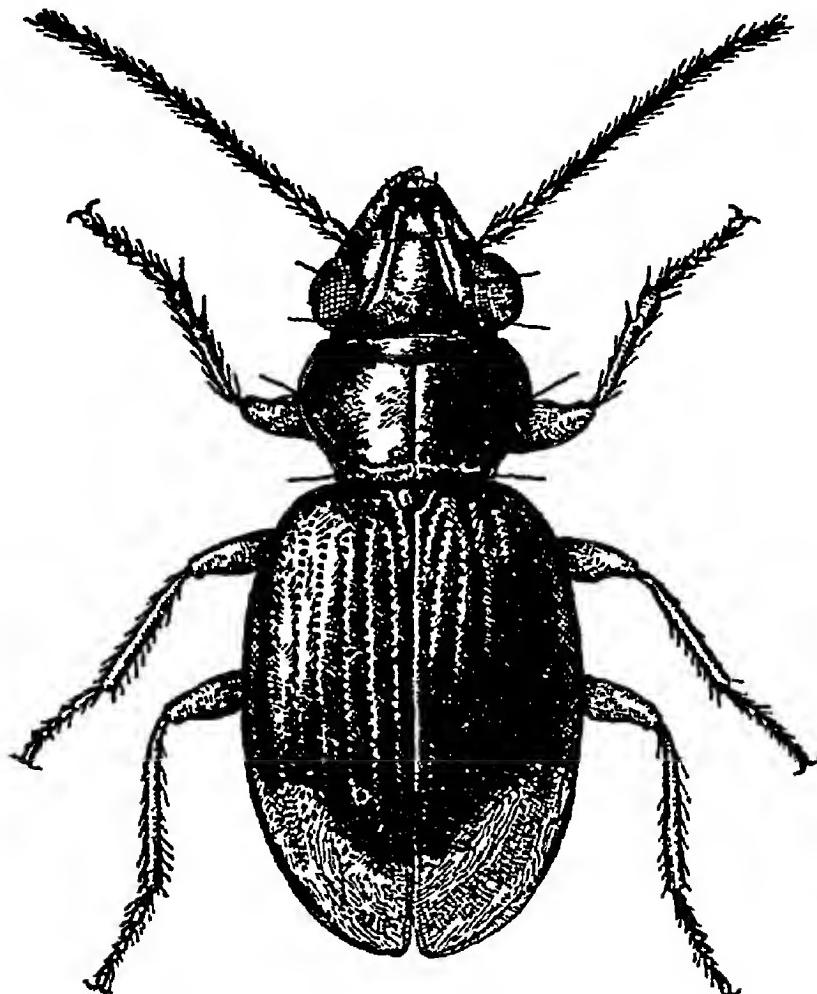


Fig. 34.—*Bembidion niloticum* Dejean

sixth wider than head, nearly a half wider than long, base about equal to apex, its sides oblique and slightly emarginate, sides strongly rounded and sinuate just before the hind angles, which form on each side a sharp rectangular tooth, with a fine carina, median line fine, front transverse impression shallow, hind one a little deeper, basal foveæ moderately deep and subrugose, adjoining the angles, basal area with some faint, minute puncturation *Elytra* convex, ovate, but with strongly marked shoulders, a half wider than prothorax, two-fifths longer than wide, border extending inwards a little

beyond the base of stria 5, a clavicular fold present; striae moderately impressed and clearly punctate, the outer ones shallower, 1 deep throughout, the rest much fainter behind, though visible to apex, ventral striae short, apical stria poorly developed; intervals flat, dorsal pores on the interval Microsculpture isodiametrical throughout and very distinct

Length, 3.5-3.75 mm.

Distribution PUNJAB. Kalka (*G. Babault*); Upper Jhelum, Daphar Plantation (*H. G. Champion*), Lyallpur (*K. N. Trehan*), Lahore, Shahdara Plantation (*B. M. Bhatia*) UNITED PROVINCES. Aamora and Ranikhet (*H. G. Champion*), Mussooree, Dhobi Ghat (*M. Boe*) ASSAM Naga Hills (*S. N. Chatterjee*) BENGAL Calcutta, Dhappa PERSIA Seistan, Nasritabad (*S. W. Kempf*) ARABIA EGYPT IRAN TURKESTAN CHINA JAPAN. INDO-CHINA

Type in Mr René Oberthür's collection, that of *hamatum* in the Petrograd Academy of Science, that of *batesi* in the Brussels Museum. In my Catalogue of Indian Carabidae the letter E*, indicating the whereabouts of the type of *batesi*, has by inadvertence been placed against *hamatum*.

The species, which is very widely spread, is a somewhat variable one. Harold gives Ceylon as a locality, but he thought the species identical with *sobrinum*.

402 *Bembidion sobrinum*, Bol.

Bembidion sobrinum Boheman, Ins Cassr 1, 1846, p. 232, Résumé, Deser Cat S Afr Ins 11, Trans S Afr Phil Soc vii, 1896, pp. 591-2, id. Ann S Afr Mus xxiii, 1926, p. 647

Bembidion opulentum Netolitzky*, Ann Mag. Nat Hist (3) n. 1858, p. 420, Harold, Deutsch Ent. Zeitschr 1877, p. 341; Bates, Trans Ent. Soc. Lond 1885, p. 269. Netolitzky, Ent. Blätter 1914, p. 167; Andrewes, Ent Month Mag 1921, p. 249

Bembidion europaeum Bates*, Ann Mag. Nat. Hist (3) xii, 1886, p. 156, Andrewes, Ann Mag. Nat. Hist (9) iii, 1919, p. 472

Bembidion opulentum Andrewes, Ann Mag. Nat. Hist (9) xix, 1927, p. 104

Bembidion sobrinum Netolitzky, Wien Ent. Zeit 1931, pp. 176-8

Colour black, upper surface bronze, rather dull; palpi (except apex of penultimate joint), the greater part of joints 1 to 4 of antennæ, legs, apex of elytra, and a lateral apical spot or each side, flavous. The colour at apex and the two spots generally unite to form more or less of a crescent.

Head with rather shallow, nearly straight furrows, converging strongly in front, running on each side from the back of the eye to the front margin of the clypeus, the space between them nearly flat. Eyes prominent, antennæ stout, reaching basal fourth of elytra, surface impunctate. Prothorax convex, cordate, a sixth wider than head, a half wider than long, base somewhat arcuate, its sides very oblique, slightly narrower

than apex sides strongly rounded in front and sinuate just before the hind angles, which form on each side a sharp rectangular tooth, with a slight carina, median line very fine, both transverse impressions rather shallow and very vaguely punctate, basal foveæ small but deep, adjoining the angles *Elytra* convex, ovate, with well marked shoulders, a third wider than prothorax, rather more than a half longer than wide, border extending inwards rather beyond the base of stria 5, where it terminates in a small tooth, a clavicular fold present, striae rather lightly impressed finely but very clearly punctate, hardly shallower at sides, faint behind, but visible practically to apex, 1 no deeper than the rest on disk, but deep near apex scutellary striole fairly long, apical stria very slight, though present intervals nearly flat, dorsal pores on the interval, surface somewhat depressed round the front one Microsculpture isodiametric throughout, the meshes finer than in *niloticum*

Length, 3 5-4.5 mm

Distribution INDIA, widely spread throughout the plains but not extending beyond the foot-hills of the Himalayas CEYLON BURMA Thayetmyo SIAM CAMBODIA JAVA SOUTH and EAST AFRICA

Type in the Stockholm Museum, that of *opulentum* in the Berlin Zoological Museum, that of *europis* in the British Museum

B. luzonicum Netolitzky (Wien. Ent Zeit 1931, p. 177) from the Philippine Is, *B. riverinæ* Sloane (Proc Linn Soc NSW 1894 (1895) p 405) from Australia, and probably also *B. hamiferum* Fauvel (Rev d'Ent 1882, p 231) from New Caledonia are only slightly differentiated forms of this widely spread species Péringuey in his S African Catalogue writes "I have seen many examples tessellate with pale yellow as much as in *B. variegatum*". I rather suspect this statement, but in any case it does not apply to Indian specimens

I have commented on Harold's reference under *niloticum*

403 *Bembidion trimaculatum*, Andr

Bembidion trimaculatum Andrewes, Eos III, 1927, p 68. f 3

Colour black, shiny head and prothorax dark æneous, joints 2 to 4 of antennæ brown palpi, legs (except apical half of femora), and about half the elytra pale ferruginous The dark markings on the elytra comprise the suture a small patch near middle of base, shoulders and margin to a fourth from apex, and three elongate oval patches on apical half, leaving intervals 4 and 5 pale

Head with deep furrows, converging in front and extending on to clypeus, leaving a convex area between them, which is

faintly transversely striate, eyes large and prominent, antennæ stout, reaching basal third of elytra, surface impunctate. Prothorax convex, cordate, barely wider than head, but fully a third wider than long, base slightly narrower than apex, its sides very oblique, sides strongly rounded, sinuate close to the hind angles which are sharp, though obtuse, project a little outwards, and are provided with a well marked carina, median line very fine, a few punctures along the shallow front transverse impression, a deep transverse furrow in front of base, along which are some large though vague punctures, basal foveæ deep, surface smooth, with a few transverse striae just before base. Elytra convex, ovate, with very square shoulders, not quite a half wider than prothorax, exactly a

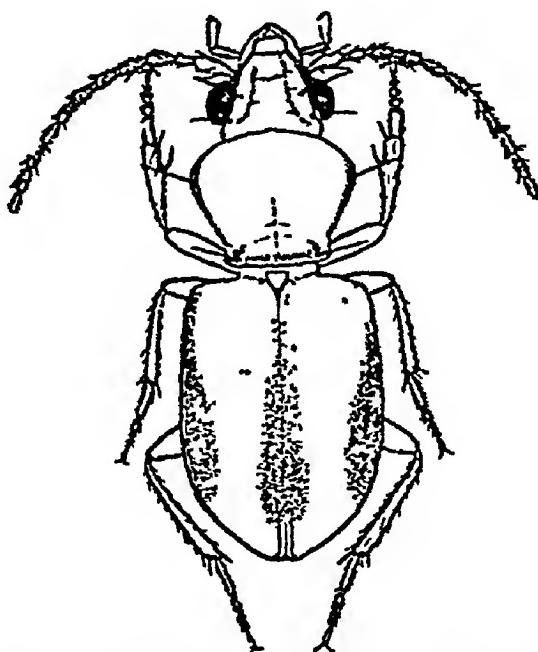


Fig. 35.—*Bembidion trimaculatum* Andrews

half longer than wide, side border reaching stria 5, a clavicular fold present, striae very clearly punctate, inner ones only impressed, 1 entire, the others evanescent at apex and gradually shortening outwards, 7 barely reaching a third from base, scutellary striae short, apical stria obsolete, its pore isolated, intervals nearly flat, dorsal pores on the interval. No appreciable microsculpture. Metasternal process bordered.

Length, 3-3 4 mm

Distribution PUNJAB Upper Jhelum, Daphar Plantation (*H G Champion*), Lyallpur (*K N Trehan*) UNITED PROVINCES. Dehra Dun (*M Cameron*)

Type in the British Museum

Quite unlike any other Indian species

404 *Bembidion caporiaccoi*, Net.

Bembidion caporiaccoi Netolitzky, Att Mus Civ Trieste, xii, 1934, p 99

Colour black, upper surface dark metallic green, very shiny, joint 1 of the antennæ sometimes reddish, tibiae and tarsi more or less ferruginous

Head with fairly deep furrows, converging a little forwards and continued on to the clypeus; eyes large and prominent, antennæ moniliform, extending very little beyond base of prothorax, surface impunctate. *Prothorax* convex, cordate, slightly wider than head and a third wider than long, base narrower than apex, truncate at middle, with a well marked convex border, within which is a deep punctate marginal channel, the sides of base oblique and emarginate, so that the sharp rectangular hind angles, which are furnished each with a slight carina, are pushed forward well in front of the median part, sides narrowly bordered and strongly rounded, median line fine, basal foveæ small, deep, and rounded, only separated on each side from the angle by the carina, surface smooth, with a little faint cross-striation. *Elytra* convex, subquadrate, with prominent shoulders, a half wider than prothorax, and also a half longer than wide, border nearly reaching stria 4, punctate-striate, stria 1 moderately deep throughout, 2 and 3 very lightly impressed, the other striae represented by the punctures, which are distinct on the basal half but disappear behind, scutellary striae represented by a few punctures, apical stria obsolete, so that the pore is isolated, intervals flat, dorsal pores inconspicuous, near stria 3, surface smooth, sometimes a little depressed on disk behind base. No microsculpture. *Metasternal process* narrowly bordered

Length, 3 mm.

Distribution. KASHMIR Sind Valley, Kangan, 6500 feet, Indus Valley, Olthingthang, 8600 feet, Shigar Valley, Shigar, Alchori, and Kushumul, all about 7500 feet, Braldo Valley, Askole, and Biaho, about 10,000 feet (all L Caporiacco)

Type in the Milan Civic Museum

The species belongs to the subgenus *Bembidion*, s.s., and, except in the absence of spots, differs little from the palæarctic *B quadrimaculatum* L

Genus TIRUKA, nov

TYPE, *Bembidion bolivari* Andr

Head with the eyes very small and flat, with large, rounded facets, which are not contiguous, genæ conspicuous, extending outwards as far as eye, front supraorbital pore at mid-eye level, hind one far behind and distant from eye, maxillæ long and slender, extending beyond the mandibles, which are also

long and slender, maxillary palpi with the antepenultimate joint very long and thin, a third longer than joint 1 of the antennæ, which are long and rather thick, with joint 2 very nearly as long as 3, its upper two-thirds moderately pubescent. The other characters as in *Bembidion*.

The uniform pale colour suggests at first sight an *Anophthalmus*, while the small, flat eyes and the unusual length of the maxillæ and antepenultimate joint of the maxillary palpi differentiate it from any species of *Bembidion* known to me. The position of the hind supraorbital pore is very much as in *Lymnaeum* though, owing to the reduction in the size of the eye, the distance between it and the eye is much greater. Owing to the extreme fragility of the unique specimen I have, unfortunately, been unable to carry out any dissections.

405 *Tiruka bolivari*, Andr.

Bembidion bolivari Andrewes, Eos vi, 1927, p. 67, f. 2

Colour uniformly ferruginous, elytra very faintly iridescent.

Head convex, with fairly deep, parallel furrows; antennæ reaching basal third of elytra, surface impunctate. Prothorax convex, cordate, two-fifths wider than head, a sixth

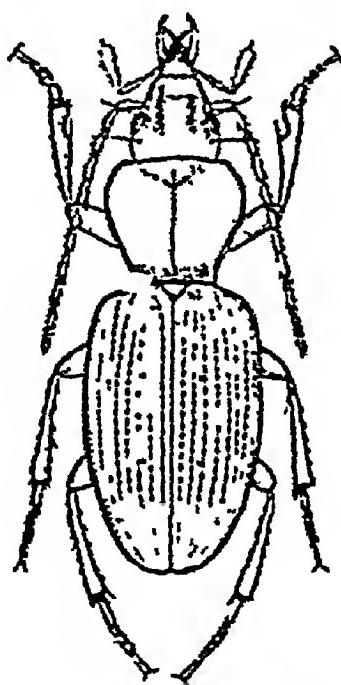


Fig. 36.—*Tiruka bolivari* Andrewes

wider than long, base and apex about equal, the former produced at middle, sides rounded, with a narrow reflexed border, sinuate rather near hind angles, which are right and very sharp, without carina, median line and hind transverse depression fairly deep, the former widening a little near base,

the foveæ small but deep, surface smooth, a few vague punctures along front margin, basal area with some coarse punctures and a few longitudinal striæ. *Elytra* depressed, elongate-oval, not quite a half wider than prothorax, three-fourths longer than wide, border not quite reaching stria 5; striæ moderately impressed, finely and a little indistinctly punctate, 1 deep throughout, outer striæ shallower, 2 to 7 evanescent near apex, scutellary striole short, apical stria not very clearly impressed, its pore rather large, intervals slightly convex, dorsal pores on the interval. Microsculpture of the elytra formed by transverse or slightly oblique lines, just visible under the microscope, the prothorax with similar, but rather coarser lines, forming very wide meshes, the head with isodiametric meshes. Metasternal process bordered. Protarsi ♂ with two dilated joints, each produced inwardly into a fairly sharp tooth.

Length, 5.5 mm.

Distribution SIKKIM.

Type in my collection. This is a unique ♂ example, received with other specimens many years ago by the Madrid Museum from Mr R Oberthur. These were said to come from "Padantsin," a place I cannot find on any map, probably the locality is either Maria Basti or Gnatong.

Genus TACHYS.

Tachys Stephens, Ill Brit Ent Mandib n, 1828, pp 2 and 4, Dejean, Spec Gen v, 1831, p 33, Jacquelin-Duval, Ann Soc Ent Fr 1852, p 189, Motchulsky, Études Ent xi, 1862, p 27, Putzeys, Ann Mus Civ Gen vii, 1875, p 737, Bates, Biol Centr-Amer Ins Col 1, (1), 1882, p 138, Reitter, Wien Ent Zeit 1884, p 116, Netolitzky, Ent Blätt 1914, p 173, Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 18, id, Revision of the Oriental Species of the Genus *Tachys*, Ann Mus Civ Gen li, 1925, p 327.

Tachyta Kirby, Faun Bor Amer iv, 1837, p 56, Schaum, Berl Ent Zeitschr 1863, p 88.

Elaphropus Motchulsky, Bull Mosc 1839, i, p 73, Andrewes, Ann Mag Nat Hist (9) iii, 1916, p 472.

Pericompsus Leconte, Ann Lyc N Y v, 1852, p 191.

Tachylopha, *Tachyura*, *Tachymenis* (= *Tachyta*), *Polyderis* Motchulsky, Études Ent xi, 1862, p 27.

Barytachys Chaudoir, Rev Mag Zool 1868, p 213, Bates, Biol Centr-Amer Ins Col 1, (1), 1882, p 140, Andrewes, Revision, p 328.

Porotachys Netolitzky, Ent Blätt 1914, p 174.

Sphærotachys Müller, Stud Ent 1, 1926, pt 2, p 95.

Nototachys Alluaud, Afra 2, 1930, p. 14.

Trepanotachys Alluaud, Afra 7, 1933, pp 3, 4, and 17.

TYPE, *Tachys scutellaris* Steph. (Europe)

Colour very variable, but usually either ferruginous, with or without dark markings, or dark, with or without pale spots

on the elytra. Body glabrous, rarely pubescent, a micro-sculpture usually present on the elytra, though sometimes wanting.

Head with eyes of variable form, adjoining the buccal fissure, two supra-orbital setæ present, the frontal furrows of varying depth, usually single, but sometimes duplicated, or even triplicated, parallel or diverging a little behind, usually confined to the front, but in *fumigatus* very deep, converging and nearly meeting on the front of the clypeus, antennæ of varying length, sometimes filiform, but more often submoniliform, fully pubescent from joint 4, but joints 2 and 3 bear a few setæ, labrum transverse, truncate, or slightly emarginate, sextose, clypeus transverse, bisetose, mandibles short but fairly stout, mentum with a small tooth in the emargination, and in some species, just below the tooth, two large forameniform pores, one on each side, ligula truncate, bisetose, paraglossæ narrow, extending beyond the ligula; maxillæ curved and slightly hooked at apex, a row of fine bristles along the inner margin, the outer lobe two-jointed, palpi with the penultimate joint pubescent and strongly dilated, the apical joint very small, subulate, surface nearly always impunctate.

Prothorax usually convex and more or less cordate, base often produced a little at middle, its sides horizontal or sometimes oblique, sides bisetose, hind angles generally sharply rectangular and often with a small longitudinal carina on each side adjoining them, in *complus* projecting outwards as a sharp tooth; median line and front transverse impression generally very little developed, but, except in the *oratus*-group, the hind transverse impression is present, with a sulcus at the bottom of it. This sulcus is usually deep and often crenulate, frequently interrupted at middle, with a pore at the centre of the interruption (two pores in the *haliploides*-group), as a rule it runs close to the base at sides and thence obliquely forward on each side to the centre, thus forming a border of variable depth to the median part of the base. This character is best seen when the specimen is viewed from in front, as it often happens that the sulcus is interrupted while the transverse impression is continuous.

Elytra with the border generally rounded at shoulder, but sometimes angulate, the basal part often directed slightly backwards and terminating opposite stria 4, in most groups the border is smooth, but in the *fasciatus*-group and in some others it is minutely setulose and occasionally dentate, the setæ are very fugitive, but, if the insect is examined sideways under the microscope, the minute pores from which they spring are, when present, clearly visible. As in *Bembidion*, a "clavicular fold" is sometimes, though rarely, present. The striation is extremely variable, and any number of striae may be present,

from 1 up to 9, but the scutellary striole is wanting, the first to disappear is the seventh, then the sixth, and so on inwards to the first stria, which is usually entire, whereas the other striae are nearly always shortened at both ends. The eighth stria is usually deep and entire, when it isolates a convex ninth interval, but in some groups it is interrupted at middle, sometimes disappearing also in front, and occasionally altogether, where not impressed it is represented by an irregular series of few but large pores, at about three-fifths from base it approaches stria 9, and at this point the two striae are only separated by the width of a setiferous pore. The striae may be smooth, but are often finely crenulate, sometimes punctate, or even formed entirely by punctures. A recurved striole, which joins stria 1 at apex, is nearly always present, and varies a good deal in shape, length, and position, as a rule its front end, which is sometimes hooked, is near the middle of the elytron, but in the *umbrosus*-group it runs very near the margin, and exceptionally, as in *acaroides* and most of the *truncatus*-group, it may disappear altogether.

The setiferous dorsal pores on the elytra are of high taxonomic value. Occasionally the surface is covered with numerous pores, or there may be two rows of them (*elegans*), or they may occupy unusual positions, with or without accessory ones (*comptus*-group). Normally, however, there are two dorsal pores, placed at about a third and two-thirds from base on the inner margin of stria 3, and an additional pore on the inner margin of the striole, about half-way along it. In the *fasciatus*-group the front pore may be displaced outwards as far as interval 6, the hind pore being then placed much further back, generally within or just in front of the hook of the striole, while the pore adjoining the striole is far back near apex. In the *umbrosus*-group these pores occupy a variety of different positions, and in the *halaploides*-group only one very minute pore is present on the site of stria 3 and at about middle.

The underside is generally glabrous and impunctate, but in the *fasciatus*-group there are sometimes traces of pubescence on the last ventral segment, and in the *truncatus*-group the whole of the underside is minutely but always sparsely pubescent. The prosternum is generally more or less longitudinally sulcate. The metasternal process between the mesocoxæ is usually, but not always, bordered, sometimes the border is fine (*fasciatus*-group), sometimes there is a deep arcuate groove, convex forwards, which leaves the process very widely bordered (common in the *poltius*-group), occasionally there is a straight transverse groove a little further back, tangential to the coxal cavities (*fumigatus*). On the ventral segments there is a single seta on each side of the median line, on the last segment there is also one on each side in the ♂,

on or near the margin, two on each side in the ♀, generally all in line, but in the *fasciatus*-group the inner pair is more or less removed from the margin. The legs are rather slender and usually pale in colour, the protibiae obliquely truncate on the outer side at apex. In the ♂ protarsi the two basal joints may be distinctly dilated and inwardly produced (*fasciatus*-group), or slightly dilated (some of the *politus* group), or only the basal joint may be dilated (*latus*), or none at all. As a rule the first joint of the metatarsi is nearly or quite as long as the next three taken together. The claws are nearly always smooth, but minutely denticulate in the *umbrosus*- and *haliploides*-groups.

As in *Bembidion*, the microsculpture of the upper surface is frequently of use in the discrimination of the numerous species, and the various forms which it assumes are similar to those mentioned under that genus. It is not by any means uniform on all parts of the body, or even on the same part, so that in the descriptions it has often been possible to indicate its character in general terms. In some species, especially in those of the *haliploides* group, there is sometimes on the elytra the appearance of large pores on the upper side, without any break in the surface, and the course of the striae may sometimes be traced by their means. To a certain extent corresponding depressions may be seen on the underside of the elytra, but the source of this appearance seems to be chiefly intradermal and they are referred to here as "underlying" pores.

Rangs World-wide

Except in the case of the palaeartic species *T. narus* Gyll., practically nothing is known of the early stages in the life-history of these insects. Like the species of *Bembidion*, those of this genus usually frequent the vicinity of water, but some are found in moist places under refuse, dead leaves, etc., a few (*umbrosus* group) live under bark, and one or two members of the *haliploides*-group have been found in fungi. Little can be said at present regarding the area of distribution of the different species, though in certain instances, e.g., *fasciatus*, *latus*, and *fumigatus*, it is known to be a wide one, many, however, have hitherto been met with in one locality only, and sometimes are represented by a single specimen.

In my "Revision of the Oriental Species of the Genus *Tachys*," published in 1925, all the then known species from South-East Asia (including India) were tabulated, and the scheme of classification then adopted has, with some modification, been introduced here. The extra-Indian species have, of course, been excluded, but those found in the Indian region are distributed among the same fourteen groups; as a matter of convenience a few changes have been made in the group-names, for it seemed undesirable in this connexion to make use of the

names of species not found in the region, and, wherever necessary, another name has been substituted, though, to obviate any confusion, the Revision-name has in such cases been inserted in parentheses. The groups are not all natural ones, but, as in the genus *Bembidion*, it seems desirable for the present to restrict their number rather than attempt a more strictly phylogenetic classification.

In the keys to the various groups occasional use has been made of the pale spots with which the elytra are frequently decorated. It happens, however, exceptionally, that in a normally spotted form the spots become obsolete or disappear, and, conversely, an apical spot may sometimes be seen in an example of an unspotted species. A few of such cases have been dealt with here, but not all, so that, when the keys are consulted, this fact should be borne in mind.

Key to the Groups of Tachys.

- 1 (8) Mentum with two circular pores (except *truncatus*)
 - 2 (3) Elytra convex, short-ovate, only a fourth wider than long, border practically smooth, antennæ with joints 2 and 3 of equal length (*recurvicollis*-group of the Revision)
 - 3 (2) Elytra flat or moderately convex, rarely less than a half longer than wide, border of elytra setulose, antennæ with joint 2 longer than 3
 - 4 (7) Stria 8 impressed on apical half of elytron, apical striole present on middle of elytron Length 1.8-4 mm
 - 5 (6) Elytra ferruginous or piceous, rarely spotted, depressed, nearly always a half longer than wide (*triangularis*-group of the Revision)
 - 6 (5) Elytra black, with pale spots, iridescent, moderately convex, about a half longer than wide
 - 7 (4) Stria 8 wanting, apical striole wanting or rudimentary (except *ochrias*) Length 1-1.8 mm
 - 8 (1) Mentum without circular pores
 - 9 (26) Apical striole on middle of elytron, or obsolete
 - 10 (25) Elytra with two dorsal pores (exceptionally more), basal sulcus of prothorax not having two pores at middle, claws not denticulate
 - 11 (24) Stria 8, at least on apical half, and apical striole both present
 - 12 (23) Frontal furrows not exceptionally deep, not converging in front, and nearly meeting on front margin of elytrons, labrum truncate or moderately emarginate
- lunus*-group, p 211
- fasciatus*-group, p 213
- [p 228
quadrillum-group,
- [p 230
truncatus-group,

- 13 (16) Stria 8 interrupted at middle, or, if entire, only lightly impressed on basal half
- 14 (15) Stria 8 completely interrupted at middle, and represented by large pores in front [p 233
expansicollis-group,
- 15 (14) Stria 8 subinterrupted at middle, or lightly and irregularly impressed on basal half (*exaratus* group of the Revision) [p 238
rhombophorus group,
- 16 (13) Stria 8 entire and at least moderately deep throughout, form generally convex, never depressed
- 17 (18) Elytra fully striate, the striae punctate or crenulate, form moderately convex [p 239
notaphoides group,
- 18 (17) Elytra not fully striate (except *Llugi*)
- 19 (22) Prothorax with a transverse basal sulcus, shoulders of elytra smooth and rounded
- 20 (21) Hind angles of prothorax adjoining or close to base of elytra
- 21 (20) Hind angles of prothorax projecting laterally on each side as an acute tooth at some distance from the part of the base in contact with the elytra
- 22 (19) Prothorax without a transverse basal sulcus shoulders of elytra dentato
- 23 (12) Frontal furrows long and deep, converging in front and nearly meeting on the frontal margin of the clypeus, labrum semicircularly emarginate [p 287
fumigatus group,
- 24 (11) Stria 8 and apical striole obsolete, border of elytra setulose and dentate Length 1.5 mm
- 25 (10) Elytra with only one dorsal pore, basal sulcus of prothorax with two pores at middle, claws denticulate form very short and convex Length 1.5-2.5 mm
- 26 (9) Apical striole close to margin, border of elytra setulose, claws denticulate, form depressed or moderately convex (*nanus* group of the Revision) [p 291
haploides group,
- [p 289
umbrosus-group.]

Key to the luxus-group

406 *Tachys luxus*, Andr.

Tachys luxus Andrewes, Revision, 1925, pp 338 and 339.

Colour chestnut-brown, very shiny, elytra a little lighter towards apex, antennae and legs ferruginous

Head rather wide, with deep single furrows, curving round behind eyes, which are moderately prominent; antennae slender. Prothorax moderately convex, two-thirds wider than long, base much wider than apex, sides with a strongly reflexed border, explanate behind, rounded in front, and sinuate

rather near the hind angles, which are right, sharp, and a little reflexed, without carina, median line and front transverse impression clearly marked, basal sulcus deep, punctate, uninterrupted and without central pore, the foveæ inside the hind angles, wide and deep. Elytra ovate, moderately convex, with strongly rounded sides, only a fourth longer than wide, border practically smooth, though one or two minute setæ are visible, rounded at shoulder and extending inwards to stria 4, four vaguely crenulate dorsal striæ, 1 entire and

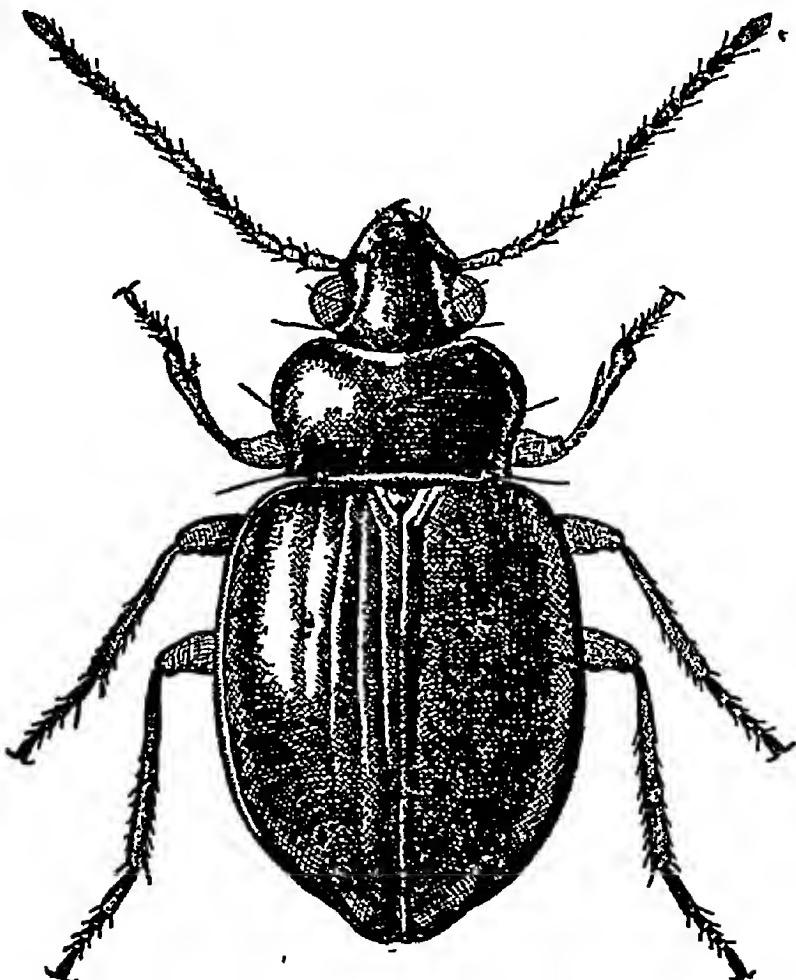


Fig. 37.—*Tachys luxus* Andrews

fairly deep, 2 shallower, 3 and 4 very lightly impressed, 5 visible close to base, 2 to 4 vaguely reaching base, shortened behind, 8 deep on apical half, represented by pores in front, striole rather long, not far from margin, but curving strongly inwards in front, the pore far back near apex; dorsal pores on inner margin of stria 4, at basal fourth and just in front of the striole. The microsculpture consists of fine transverse lines, just visible on the elytra, more distinct on the prothorax, reticulate, with wide meshes, on the head. Prosternum slightly

sulate; metasternal process finely bordered Protarsi ♂ with two dilated joints.

Length, 2 8 mm

Distribution BURMA Karen Mountains, at about 4500 feet (*L. Fca*), Tenasserim (*J. W. Helfer*) TONG-KING

Type in the Genoa Civic Museum.

The species is allied to the Japanese *T. recurvicollis* Andr., and, so far as is known at present, has no near Indian allies

Key to the fasciatus-group

- 1 (4) Front dorsal pore on or immediately adjoining stria 3, border of elytra dentate, angulate at shoulder
Length 2 mm
- 2 (3) Elytra fully striate, the outer striae lightly impressed, the striae punctate border conspicuously dentate. hind dorsal pore distant from apical striae [p 214.
dentatus, Andr.]
- 3 (2) Elytra with striae 1 and 2 lightly impressed and vaguely crenulate, the rest obsolete though often visible. border very finely dentate; hind dorsal pore just in front of the apical striae [p 215
impressipennis, Motch.]
- 4 (1) Front dorsal pore placed nearer margin than stria 3
- 5 (16) Front dorsal pore on or adjoining stria 4 (if on interval 4, then nearer to stria 4 than stria 3)
- 6 (15) Antennae long, filiform; colour of upper surface mainly ferruginous, or, if darker, somewhat iridescent
Length 2 5-3 mm
- 7 (14) Base of prothorax wider than apex, the hind angles at least slightly obtuse, elytra with some dark markings, a microsculpture present
- 8 (13) Prothorax sinuate on each side behind, elytra ferruginous, with a dark band across middle
- 9 (10) Elytra with shallow striae, obsolete at sides. colour pale ferruginous, with a faint dark transverse band
Length 2 75 mm
- 10 (9) Elytra with fairly deep striae, colour dark ferruginous, with a black band across middle
- 11 (12) Elytra less than a half longer than wide
Length 2 75 mm
- 12 (11) Elytra nearly two-thirds longer than wide
Length 3 mm
- 13 (8) Prothorax not sinuate on each side behind, elytra castaneous, iridescent, with a dark cloud on disk
Length 2 75 mm [p 216.
transumbratus, Bates]
- [p 217.
fasciatus, Motch.]
- [Andr., p 219
fasciatus var *inceritus*,]
- [p 219
opalescens, Andr.]

- 14 (7) Prothorax equally contracted at extremities, the hind angles right and sharp, elytra ferruginous, with three deep striae, no microsculpture present Length 2.5 mm [p 220
impressus, Motch ,
- 15 (6) Antennæ short, submoniliform, colour of upper surface piceous Length 2 mm
vilis, Andr , p 221
- 16 (5) Front dorsal pore on interval 6
- 17 (30) Microsculpture of the head between the eyes formed by isodiametric or moderately wide meshes
- 18 (23) Elytra with the four inner striae at least moderately impressed
- 19 (20) Elytra only vaguely clouded, the striae hardly perceptibly crenulate Length 2.75-3 mm
curvipes, Bates, p 222
- 20 (19) Elytra with a dark cloud, the inner striae evidently punctate or crenulate Length 3.25-4 mm
- 21 (22) Prothorax about a half wider than long, stria 2 not interrupted before apex .
sericeus, Motch, p 223
- 22 (21) Prothorax about a third wider than long, stria 2 interrupted for some distance before apex
prolixus, Bates, p 224
- 23 (18) Elytra with not more than three clearly impressed striae
- 24 (25) Elytra flavous, with a deep piceous band Length 2.4 mm [p 224
gracchus, sp nov ,
- 25 (24) Elytra ferruginous, more or less clouded Length 3-3.4 mm
- 26 (27) Elytra more than a half longer than wide, the border and suture more or less brown; striae 1 to 3 moderately impressed, the other striae mostly visible
cardoni, Andr , p 225
- 27 (26) Elytra about a half longer than wide, stria 1, and sometimes 2, moderately impressed, the rest as a rule obsolete
- 28 (29) Elytra deeply clouded
dorsalis, Motch , p 226
- 29 (28) Elytra vaguely clouded
dorsalis var *obsolescens*, [Bates, p 226
- 30 (17) Microsculpture of the head between the eyes formed by fine transverse lines; elytra ferruginous, with a dark cloud on disk Length 3-3.25 mm
[i]p 227
tropicus, Nien ,

407 Tachys dentatus, Andr

Tachys dentatus Andrewes, Revision, 1925, p 343, t 3, f 1

Colour ferruginous, elytra sometimes with a faint dark band behind middle

Head wide, with fairly deep, wide furrows, very short and not diverging behind, but extending on to clypeus in front, eyes small and flat; submentum fringed with setæ, which stretch forward over the mentum; antennæ short and submoniliform, joint 3 not much shorter than 2 Prothorax

cordate, a half wider than long, sides strongly sinuate behind, angles a little obtuse and rounded, with a rudimentary carina; basal sulcus indistinctly crenulate, interrupted at middle by a longitudinal ridge, the median line sometimes continued along the ridge through the interruption, a few minute setæ visible on the border near front angles. Elytra slightly truncate at apex, border angulate at shoulder, evidently dentate and setulose, the teeth rather widely placed; fully striate, the striae clearly punctate but shallow, especially at sides, and a little arcuate, 1 to 6 reaching, or nearly reaching, base, 7 stopping short of base, 8 deep behind, represented by some large punctures in front and a few small ones along middle. 5 and 6 terminating a long way from apex, 7 curving round behind them, parallel with 8, apical striole short, curving inwards and ending a little nearer suture than margin, joining (or nearly so) the extremities of striae 3, 4, and 7, the pore rather behind middle, dorsal pores on inner side of stria 3, at about a third and two-thirds. No obvious microsculpture, the head being particularly smooth and shiny. Body beneath minutely and sparsely setulose.

Length, 2 mm.

Distribution. TENASSERIM (J. W. Helfer). MALAY STATES. SIAM. CAMBODIA. COCHIN-CHINA. JAVA. SUMATRA. PRINCES ISLAND.

Type in my collection

408 *Tachys impressipennis*, Motsch

Tachys impressipennis Motchulsky *, Études Ent viii, 1859, p 39, Putzeys, Ann Mus Civ Gen vii, 1875, p 745; Andrewes, Revision, 1925, pp 341 and 346, t 3, ff 2 and 13, id, Trans Ent Soc Lond 1928, p 18, id, Resultats Scientifiques du Voyage aux Indes Orientales Néerlandaises de LL AA RR le Prince et la Princesse Léopold de Belgique, Ném Mus Hist Nat Belg (Hors Série), iv. 4, Carab. 1932, p 8.

Tachys dohereti Jordan *, Nat Zool i, 1894, p 111

Tachys sinuaticollis Sloane, Proc Linn Soc N S W. 1903, p 579; id, Proc Linn Soc N S W 1921, pp 200 and 207

Colour pale ferruginous, the disk of the elytra sometimes faintly clouded

Head with short, shallow furrows; eyes flat, antennæ submoniliform. Prothorax cordate, a half wider than long, base with its sides oblique, hardly wider than apex, sides sinuate behind, the angles obtuse, somewhat reflexed and rounded, basal sulcus not crenulate, hardly interrupted, and without pore at middle. Elytra depressed, the border finely dentate and setulose, with the denticulations placed moderately close together, forming a very obtuse angle at shoulder, and thence directed a little backwards and inwards to a point well inside the hind angles of the prothorax, striae 1 and 2

faintly impressed and equally faintly crenulate, the remainder obsolete, though here and there traceable, 8 very irregularly impressed on apical third, striole short, curving slightly inwards, its pore much nearer apex than front, dorsal pores small but clear, on or near the site of stria 3, at two-fifths from base and just in front of the striole. The fine transverse lines of the microsculpture are more clearly visible on the prothorax than on the elytra, on the head there is a faint transverse reticulation. The last ventral segment has traces of pubescence.

Length, 1 75-2 mm

Distribution BOMBAY Belgaum (*H E. Andrewes*) CENTRAL PROVINCES Nagpur and Balaghat (*E A D'Abreu*) MADRAS Chipurupalle (*R S Pattuck*), Barkuda Island in Lake Chilka (*N Annandale*) CEYLON Colombo; Peradeniya BENGAL Calcutta (*F. H Gravely*), Diamond Harbour (*T. D A Cockerell*); Burdwan BIHAR Pusa ASSAM Mangaldai (*S W Kemp*) BURMA Kawkareik (*F. H Gravely*) PENANG SIAM CAMBODIA TONG-KING JAVA SUMATRA TIMOR PHILIPPINE IS AUSTRALIA

Type in the Moscow University Museum, that of *dohertyi* in Mr René Oberthür's collection, that of *sinuaticollis* in Mr T G Sloane's collection

409 *Tachys transumbratus*, Bates

Tachys transumbratus Bates *, Ann Mus Civ Gen xxxii, 1892 p 291, Andrewes, Revision, 1925, pp 342 and 350

Colour pale ferruginous, the head and antennæ a little lighter, elytra with only a vague, fuscous, transverse band, which hardly reaches side margins

Head with deep, single furrows, diverging behind, eyes moderately prominent, antennæ rather long, filiform, joint 2 much longer than 3. *Prothorax* cordate, nearly two-thirds wider than long, base with its sides oblique, a little wider than apex, sides gently sinuate behind, the angles somewhat obtuse and reflexed, without carina, median line clearly impressed, basal sulcus deep, finely crenulate, narrowly interrupted and with a pore at middle. *Elytra* depressed, not much more than a third longer than wide, border finely setulose, rounded at shoulder and extending inwards to base of stria 4; striae subcrenulate, the inner ones moderately impressed, but hardly reaching base, 1 and 2 reaching apex, 2 very shallow behind, arcuate, and parallel with the striole, 3 to 5 progressively fainter, 6 and 7 barely traceable, 8 widely interrupted at middle, striole curved and slightly hooked, the pore far back near apex, front dorsal pore on inner side of stria 4

at about a third, hind one in the hook of the striole. Micro-sculpture of the elytra and prothorax hardly visible, that of the head distinct and formed by moderately transverse meshes. Protarsi 3 with two dilated joints.

Length, 2 6-2 7 mm

Distribution BURMA Senmigion (*L. Fea*), Moulinmein (Fieber) CELEBES.

Type in the Genoa Civic Museum

410 *Tachys fasciatus*, Motsch.

Trechus fasciatus Motschulsky *, Bull. Mosc. 1851, n, p. 506. Andewes, Trans Ent Soc Lond 1922, p. 248, Jeannel, Ann. Mag. Nat. Hist. (9) xii, 1923, p. 394

Bembidium triangulare Nietner *, Ann. Mag. Nat. Hist. (3) n, 1858, p. 422

Tachys triangularis Schaum, Berl. Ent. Zeitschr. 1863, p. 91. Bates, Trans Ent. Soc. Lond. 1873, p. 298, id., Ann. Mag. Nat. Hist. (5) xvii, 1886, p. 151, id., Ann. Soc. Ent. France 1889, p. 274, Faure, Rev. d'Ent. 1903, p. 219, Sloane, Proc. Linn. Soc. N.S.W. 1920, p. 321, id., Proc. Linn. Soc. N.S.W. 1921, pp. 200 and 207, Andrewes, Revision, 1925, pp. 340 and 350, t. 3, fig. 3 and 14, t. 4, fig. 19, 22, 30, 34, 35, and 38

Trechus atriceps W. Macleay, Trans. Ent. Soc. N.S.W. n, 1871, p. 113

Tachys trechiformis Jordan *, Nat. Zool. 1, 1894, p. 111

Tachys atriceps Sloane, Proc. Linn. Soc. N.S.W. 1896, pp. 359 and 372

Tachys migrator Péringuier, Trans. S Afr. Phil. Soc. vii, 1896, pp. 593 and 595, id., Ann. S Afr. Mus. xxiii, 1926, pp. 648 and 650

Tachys fasciatus Andrewes, Trans. Ent. Soc. Lond. 1928, p. 3, id., Tijdschr. Ent. Ixvii, 1929, p. 306

Colour ferruginous, slightly iridescent head brown, elytra with a black transverse band (sometimes obsolete) across middle

Head with single deep, wide, frontal furrows, front supr-orbital pore large, eyes prominent, antennæ long and filiform, joint 2 much longer than 3. Prothorax more or less cordate, a little more than a half wider than long, sides gently sinuate behind, base truncate, with its sides a little oblique, slightly wider than apex, hind angles obtuse and reflexed, without carina, the hind marginal pore large, on the angle, and producing a slight prominence, median line fine but clear, basal sulcus crenulate, not far removed from base, nearly obsolete at sides, uninterrupted, and with a pore at middle. Elytra flat, not quite a half longer than wide, the border minutely setulose, but hardly perceptibly dentate, rounded at shoulder and extending inwards to the base of stria 4, striae moderately impressed and finely crenulate, inner ones, especially 3 and 4, arcuate, 1 and 2 a little deeper than the others, 1 to 3 reaching base, 2 to 6 abbreviated behind,

though 2 often deepens again near apex, where it curves a little outwards, parallel with the striole, 7 hardly visible, 8 impressed close to apex and for a short distance obliquely at apical third, obsolete at middle, represented by pores in front, striole curved and not very long, rather hooked in front, ending on middle of elytron, the pore far back near apex, front dorsal pore on inner side of stria 4 at a third, hind one just inside the hook of the striole Microsculpture of the

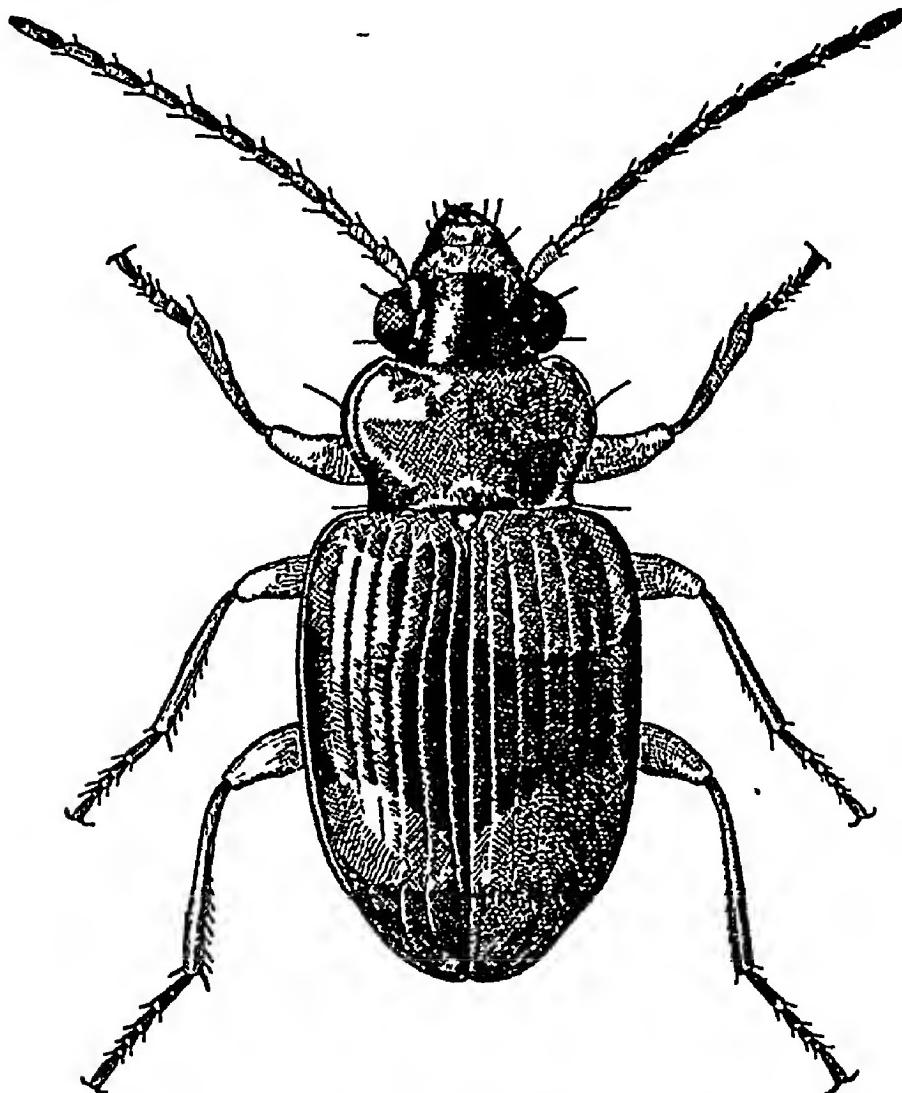


Fig 38.—*Tachys fasciatus* Motchulsky

prothorax and elytra inconspicuous, consisting of extremely fine transverse lines, that of head very clear, the meshes nearly isodiametric on vertex, but more or less transverse at sides and behind. Last ventral segment minutely setulose, though the setæ are extremely fugitive, the pores small, inner pair ♀ far removed from margin. Protarsi ♂ with two dilated joints

Length, 2 5-2 75 mm.

Distribution SOUTH-EAST ASIA JAPAN AUSTRALIA EGYPT. SOUTH AFRICA A fairly common species throughout India, Ceylon, and Burma

Type in the Moscow University Museum, that of *triangularis* in the Berlin University Zoological Museum; that of *atriceps* in the Macleay Museum, Sydney; that of *trechiformis* in Mr. René Oberthur's collection, that of *migrator* in the Cape Town Museum

410a *Tachys fasciatus* var *incertus*, Andr

Tachys tropicus Bates (not Nietn) *, Ann Mag Nat Hist (5), xvii, 1886, p 151

Tachys triangularis Nietner, var *incertus* Andrewes, Revision, 1925, pp 342 and 352

A little larger and darker than the type-form. Frontal furrows a little deeper. Prothorax with the sides more distinctly sinuate close to the hind angles, which are consequently less obtuse, the median line widening behind to form an elongate pore, and extending a little beyond the basal sulcus, which is further removed from the base, the area between the sulcus and the base having some slight longitudinal striation. Elytra nearly two-thirds longer than wide, the striation more conspicuous, the inner striae deeper, 8 moderately deep on the whole of the apical third (as it sometimes is in the type form), the front dorsal pore very large, occupying the whole of interval 4. Microsculpture similar, except on the head, where the meshes of the reticulation are transverse.

Length, 3 mm

Distribution CEYLON (G Lewis)

Type in the British Museum

This form is so very near *fasciatus* that I hesitate to treat it as a different species. The two examples in the British Museum, both taken by Mr Lewis in Ceylon, are the only ones I have seen.

411 *Tachys opalescens*, Andr

Tachys opalescens Andrewes, Revision, 1925, pp 342 and 352

Colour dark castaneous, shiny, head brown, elytra with an indeterminate dark shade on disk and along margins, joints 1 and 2 of antennae and legs flavous, surface shiny, iridescent, in certain lights opalescent

Head with deep single furrows, diverging behind, eyes moderately prominent, antennae filiform, joint 2 longer than 3. Prothorax cordate, a half wider than long, sides with a trace of sinuation behind, caused by the projection of the hind

lateral pore, base wider than apex, its sides very oblique, the hind angles obtuse and reflexed, without carina, basal sulcus deep, crenulate, uninterrupted, the pore at middle a little larger than the adjacent ones, a large rounded fovea on each side of base, the basal border with some longitudinal striation *Elytra* moderately convex, not quite a half longer than wide, with square shoulders, border minutely setulose, rounded at shoulder and reaching the base of stria 4, striae rather lightly impressed, crenulate and somewhat arcuate, 4 especially being deflected outwards near the front dorsal pore, hardly reaching base, 1 reaching apex, 2 to 4 progressively fainter and disappearing behind, the rest obsolete, 2 interrupted behind but reappearing as a shallow fovea close to apex, 8 deep behind, obsolete in the middle, represented by pores only in front, striole fairly long, curved and hooked in front, ending nearer the suture than the margin, its pore far back near apex, front dorsal pore fairly large, occupying the outer half of interval 4, the hind one in the hook of the striole Micro-sculpture very fine, but just visible on the elytra and prothorax, distinct on the head, where there is a reticulation of rather wide meshes *Protarsi* ♂ with two rather strongly dilated joints

Length, 2 75 mm

Distribution Ceylon Negombo (W Horn)

Type in my collection, co-types in the Deutsches Entomologisches Museum and the Brussels Museum

412 *Tachys impressus, Motch*

Tachys impressus Motchulsky *, Bull Mosc 1851, u, p 508, Andrewes, Revision, 1925, pp 342 and 353, id, Trans Ent Soc Lond 1928, p 4

Colour rather dark ferruginous, shiny, head brown, elytra only exceptionally with a vague cloud on disk

Head with fairly deep furrows, which, though single, are bounded outwardly by a rounded ridge, eyes rather prominent, antennæ filiform, joint 2 much longer than 3 *Prothorax* cordate, a half wider than long, equally contracted at extremities, sides strongly rounded and sinuate some little way before base, the angles right, very sharp, and strongly reflexed, basal sulcus deep, punctate, very narrowly interrupted, and with a large pore at middle *Elytra* rather flat, two-thirds longer than wide, border setulose, rounding shoulder very sharply, and reaching the base of stria 4, striae very clearly punctate, 1 and 2 deep, hardly reaching base, though 1 reaches apex, 2 very faint behind, deflected outwards a little before apex, where it forms a shallow oblong fovea, 3 impressed in front only, where it curves inwards and reaches base, 4

rather faint, the remainder obsolete, 8 impressed over the apical third only, striole fairly long, curved and slightly hooked in front, the pore near apex, front dorsal pore at about a third, occupying the whole of interval 4, the hind one in the hook of the striole Microsculpture inconspicuous throughout, though some vague transverse lines are just visible on the head Protarsi ♂ with two moderately dilated joints

Length, 2 5-2 7 mm

Distribution. BENGAL Calcutta BURMA. Tenasserim
(J W Helfer) SUMATRA

Type in the Moscow University Museum, co-type in the Deutsches Entomologisches Museum

The Burmese examples, which are in the Prague Museum, though labelled "Tenasserim," may actually have come from Bengal The Sumatran example in the Brussels Museum differs a little from the typical form, but the differences seem slight, and are probably individual only.

413 *Tachys vilis*, Andr.

Tachys vilis Andrewes, Revision, 1925, pp 342 and 354, t 4, f 39

Colour piceous, prothorax above and beneath, and sides and apex of elytra dark ferruginous, joint 1 of antennæ and legs flavous

Head with moderately deep single furrows, diverging behind, eyes rather flat, antennæ submoniliform, joint 2 much longer than 3 *Prothorax* cordate, less than a half wider than long, sides gently rounded in front and very slightly sinuate behind, base a little wider than apex, its sides strongly oblique, hind angles obtuse and somewhat reflexed, without carina, median line with the area surrounding it a little depressed, basal sulcus not very deep, vaguely crenulate, interrupted, but without any distinct pore at middle. *Elytra* depressed, with nearly parallel sides, more than a half longer than wide, border minutely setulose, rounded at and faintly sinuate behind shoulder, extending inwards to stria 4; four shallow dorsal striæ, hardly reaching base, 3 and 4 very lightly impressed, 5 to 7 obsolete, 1 reaching apex, but the rest disappearing behind, though 2 is deep quite close to apex, 8 fairly deep behind as far as the front end of striole, and again for a short distance just behind middle, otherwise obsolete, striole rather long, curved, and slightly hooked in front, the pore far back, front dorsal pore on interval 4 at about a third, hind one in the hook of the striole The fine transverse lines of the microsculpture can be seen clearly on the elytra, and even more clearly on the prothorax, on the head there is a reticulation of moderately transverse meshes Protarsi ♂ with only the basal joint dilated

Length, 2 mm

Distribution KASHMIR (H. T. Pease)

Type in the Indian Museum Calcutta, co-type in my collection

The species is most nearly allied to the Japanese *pallescens* Bates, and, as in that species, the ♂ protarsi have only the basal joint dilated

414 *Tachys euryodes*, Bates

Tachys euryodes Bates *, Ann Mus Civ Gen xxxii, 1892, p 289.
Andrewes, Revision, 1925, pp 343 and 360, t 4, f 27, id.,
Fauna of British India, Carabidæ, i, 1929, p 16, f 4 d

Colour ferruginous, a vague cloud on the disk of the elytra antennæ and legs rather lighter

Head with wide, moderately deep furrows, diverging behind, eyes rather prominent: antennæ filiform, joint 2 nearly a half longer than 3 *Prothorax* cordate, a half wider than long, sides only appearing sinuate behind owing to the projection of the hind lateral pore, base wider than apex, its sides oblique quite close to the angles, which are obtuse and reflexed, without carina, median line and front transverse impression fine but clear, basal sulcus deep, finely crenulate, uninterrupted, and without pore at middle *Elytra* moderately flat, more than a half longer than wide, border minutely setulose, rounded at shoulder and extending inwards a little beyond the base of stria 4; striae 1 to 4 moderately deep, hardly perceptibly crenulate, practically reaching base, 5, 6, and especially 7, much fainter, 1 reaching apex, 2 faint behind, parallel with striole, deep close to apex, 3 to 7 all disappearing behind, 8 deep behind, widely interrupted at middle, striole slightly curved, hooked in front, on the middle of the elytron, the pore close to apex; front dorsal pore on interval 6 at about a fourth, hind one in the hook of the striole *Microsculpture* consisting of fine transverse lines, a little less fine on the prothorax than on the elytra, head reticulate, the meshes between the eyes nearly isodiametric *Protarsi* ♂ with two strongly dilated joints

Length, 2 75-3 mm

Distribution UNITED PROVINCES. Haldwani (H. G. Champion). *BENGAL.* Calcutta (F. H. Gravely); Sardah (F. W. Champion). *CEYLON:* Anuradhapura (N. Annandale) *BURMA.* Karen Hills (L. Fea), Insein (D. J. Atkinson), Rangoon *MALAY STATES.* SIAM JAVA. *SUMATRA BORNEO.* *CELEBES*

Type (Karen Hills) in the Genoa Civic Museum

415 *Tachys sericeus*, Motsch

Tachys sericeus Motchulsky *, Bull Mosc 1851, n, p 507.
 Andrewes, Revision, 1925, pp 343 and 362, id, Trans Ent Soc Lond 1928, p 3
Tachys photinus Bates *, Ann Mus Civ Gen. xxxii, 1892, p 288.

Colour dark chestnut-red, subsericeous and faintly iridescent, head brown, elytra with the disk nearly black, the dark tint sometimes extending to the side margins, antennæ and legs ferruginous

Head with deep single furrows, diverging behind, eyes moderately prominent, antennæ fine, filiform, joint 2 longer than 3. *Prothorax* cordate, subconvex, very nearly a half wider than long, sides very faintly sinuate behind, base evidently wider than apex, its sides somewhat oblique, hind angles obtuse, reflexed, without carina, the hind lateral pores projecting a little in front of them, basal sulcus fairly deep, crenulate, narrowly interrupted, the median line just passing through it and sometimes forming an elongate pore at middle. *Elytra* depressed, a half longer than wide, rather rounded at apex, border setulose, rounded at shoulder, and extending inwards a little beyond the base of stria 4; striae all visible, converging at base, the inner ones punctate, moderately impressed, and nearly reaching base, 1 and 2 only reaching apex, where 2 is deep and bent outwards 5 to 7 very faint, 8 deep on apical third, widely interrupted at middle, the striole on the middle of the elytron, gently curved and hooked in front, the pore near apex, front dorsal pore at a fourth on interval 6, hind one in the hook of the striole. Micro-sculpture consisting of fine transverse lines; on the middle of the head it is very distinct, with a reticulation of only slightly transverse meshes. *Protarsi* ♂ with two strongly dilated joints

Length, 3 25-4 mm

Distribution BENGAL. Calcutta BIHAR. Pusa BURMA: Bhamo; Karen Hills at 4600 to 4900 feet, Kawkareik (all L Fea), Tenasserim (J. W. Helfer) MALAY STATES. SUMATRA BORNEO NEW GUINEA.

Type in the Moscow University Museum, that of *photinus* in the Genoa Civic Museum. Motchulsky's type came, no doubt, from the Helfer collection.

Hardly two of the examples examined are quite alike, the principal differences being in size and colour and in the form of the basal sulcus, of which the interruption and pore at middle are sometimes more, sometimes less, distinct.

416 *Tachys prolixus*, Bates

Tachys prolixus Bates *, Ann Mus Civ Gen xxvii, 1892, p 288,
Andrewes, Revision, 1925, pp 343 and 364

Colour ferruginous, sericeous and slightly iridescent, antennæ and legs lighter, elytra with a dark cloud on the disk extending to the side margins

Head with deep curved furrows, extending to the back of the eye, eyes rather flat, antennæ filiform, joint 2 longer than 3. *Prothorax* cordate, a third wider than long, sides slightly sinuate close to base, which is evidently wider than apex, with oblique sides, the pore projecting very slightly in front of the angles, which are obtuse and reflexed, median line clearly marked, basal sulcus rather vaguely crenulate, subinterrupted, and with the median line passing through it, basal area strigose. *Elytra* depressed, border setulose, rounding shoulder sharply and extending inwards rather beyond the base of stria 4, striæ crenulate, 1 to 4 fairly deep and practically reaching base, 1 reaching apex, but the remainder abbreviated behind, 2 deep close to but interrupted for some distance before apex, 5 to 7 just visible, 8 deep behind, widely interrupted at middle, striole on the middle of the clytron, deep, straight, hooked in front, the pore far back, a little removed from the striole, front dorsal pore on interval 6 at a fourth, hind one in the hook of the striole. Microsculpture hardly visible on the elytra, prothorax with fine transverse lines, head reticulate, the meshes between the eyes twice as wide as long. *Protarsi* ♂ with two strongly dilated joints

Length, 3 5 mm

Distribution BURMA Karen Hills, 4600 to 4900 feet
(L Fea)

Type in the Genoa Civic Museum This is the only specimen I have seen

417 *Tachys gracchus*, sp nov

Colour flavous, head, front margin of prothorax, and an elytral pattern piceous, a dark band on the elytra is placed a little before middle and occupies quite a third of the surface, it is continued forwards along intervals 1 to 4 on each side nearly to base, and the extreme apex is brown

Head with short, deep furrows, diverging behind. eyes rather prominent, antennæ long and filiform, joint 2 stouter and longer than 3, mentum with two pores. *Prothorax* cordate, two-fifths wider than head, three-fifths wider than long, base barely wider than apex, its sides oblique, sides well rounded, slightly sinuate before base, hind angles obtuse and reflexed, but hardly rounded, without carina, median line distinct between the transverse impressions, basal sulcus

deep, crenulate, without pore at middle, forming an angle at middle and not nearly reaching sides, the area behind it rugose-striate *Elytra* flat, a third wider than prothorax, a half longer than wide, border minutely setulose, but not dentate, rounding shoulder and reaching a point opposite stria 4, striæ fairly deep on disk, indistinctly crenulate, outer ones obsolete, but 4 and 5 are visible, even near base, 1 fairly deep to apex, 2 visible throughout and a little deeper near apex, the rest disappearing behind, 8 impressed on apical third, represented by pores on basal third, striole curved and not very long, ending on middle of elytron, the pore far back near apex, front dorsal pore on interval 6, at about a third, hind one within the hook of the striole Microsculpture of the prothorax and elytra formed by hardly visible transverse lines, that on the head distinct, formed by meshes which are nearly isodiametric on the vertex, transverse at sides and behind

Length, 2 4 mm

Distribution BURMA: Insein Division, Kondan (H. G. Champion)

Type in the British Museum This is the only example seen.

418 *Tachys cardoni*, Andr

Tachys cardoni: Andrewes, Revision, 1925, pp 343 and 364

Colour ferruginous, the head hardly darker, border of the prothorax and border and suture of the elytra brownish.

Head with long fairly deep, simple furrows, diverging behind, eyes rather flat, antennæ slender, filiform, joint 2 longer than 3 *Prothorax* convex, cordate, nearly a half wider than long, base with its sides very slightly oblique, a little wider than apex, sides rounded and sinuate a little before the hind angles, which are right and somewhat reflexed, without any appreciable carina, basal sulcus minutely crenulate, slightly interrupted by the median line, the area behind the sulcus longitudinally striate *Elytra* moderately flat, elongate, sides nearly parallel not very much wider than prothorax, but more than a half longer than wide, border minutely setulose, rounded at shoulder and extending inwards to rather beyond the base of stria 4; striæ 1 to 3 moderately impressed and crenulate, 4 to 7 more or less obsolete, though 4 and 5 are quite visible near base, and 7 behind, 1 entire, the rest evanescent behind, 2 deep near apex, 8 deep behind, wanting at middle, represented by large pores in front, striole long, curved, hooked in front, on the middle of the elytron, its pore near apex, front dorsal pore on the middle of interval 6 at a fourth from base, hind one in the hook of the striole. Microsculpture of the prothorax and elytra consisting of very fine transverse lines, that of the head reticulate and very

distinct, the meshes slightly transverse. Last ventral segment ♀ minutely setulose, the inner pores far removed from the margin

Length, 3-3 4 mm.

Distribution. UNITED PROVINCES: Siwalik Hills and Dehra Dun (*M. Cameron*). BIHAR: Barwa (*Cardon*).

Type in the Brussels Museum; co-type in my collection

The two examples found by Dr. Cameron, referred to in my Revision (p. 361) after *obsoletescens* Bates, must be placed under this species

419. *Tachys dorsalis*, Motsch

Tachys dorsalis Motchulsky *, Bull. Mosc. 1851, n, p 508,
Andrewes, Revision, 1925, p 497; id., Trans Ent Soc Lond.
1928, p 4

Colour ferruginous, the greater part of the head and the disk of the elytra more or less darkly clouded.

Head with fairly deep, wide furrows; eyes moderately prominent, antennæ filiform, joint 2 a little longer than 3. *Prothorax* cordate, a half wider than long, base wider than apex, sides rounded in front and sinuate behind, hind angles right, sharp, and reflexed, without carina, the hind lateral pore just breaking the outline in front of the angle; median line very fine, basal sulcus deep, crenulate, hardly interrupted, but with a very minute pore at middle, the basal area uneven. *Elytra* rather flat, about a half longer than wide, border setulose, rounded at shoulder, and reaching base of stria 4; striae more or less crenulate, not reaching base, 1 only reaching apex, 1, and sometimes 2, moderately deep, 2 interrupted behind, but impressed near apex, 3 and 4 visible, 5 to 7 obsolete, 8 moderately deep on apical third only, striole curved, hooked in front, on middle of elytron, the pore near apex; front dorsal pore on site of interval 6, hind one in the hook of the striole. Microsculpture of the elytra and prothorax formed by fine transverse lines, that of the head reticulate, the meshes, at least on the vertex, almost isodiametric

Length, 3 mm.

Distribution. BURMA: Tenasserim (*J. W. Helfer*) The author gives "Ind Or.", but it seems practically certain that the type came from Helfer's collection

Type in the Moscow University Zoological Museum

419a *Tachys dorsalis* var *obsoletescens*, Bates

Tachys obsoletescens Bates *, Ann Mus Civ. Gen. xxxii, 1892,
p 289, Andrewes, Revision, 1925, pp 343 and 360

A pale form of the species, in which the elytra are only vaguely clouded. When first I saw the type of *dorsalis*

I thought Bates's species distinct, but, after examining further material from the Prague Museum, I cannot believe it to be more than a local race. The depth of striae 2 to 4 is variable in the type-form, and does not offer a distinctive character. Motchulsky's type no doubt came from the Helfer collection.

Bates gives 25 mm as the length of his specimen, but it is actually of the same length as *dorsalis*

Distribution BURMA Karen Hills (*L. Fea*).

Type in the Genoa Civic Museum.

420 *Tachys tropicus*, Nielt

Bembidium tropicum Nieltner *, Ann Mag Nat Hist (3) ii, 1858, p. 421

Tachys cinctipennis Motchulsky *, Bull. Mosc. 1861, i, p. 99, Andrewes, Revision, 1925, p. 498; id., Trans. Ent. Soc. Lond. 1928, p. 6

Tachys tropicus Putzeys, Ann Mus Civ Gen vii, 1875, p. 746; Andrewes, Revision, 1925, pp. 343 and 366, t. 4, f. 26; id., Fauna of British India, Carabidae, 1, 1929, p. 16, f. 4c

Tachys subvittatus Bates *, Ann Mag Nat Hist (5) xvii, 1886, p. 151

Colour ferruginous, head, border of prothorax and of elytra brown, disk of elytra with a large, iridescent, sericeous, dark patch

Head with deep and rather wide furrows, diverging behind; eyes not prominent; antennae rather long, filiform, joint 2 longer than 3. *Prothorax* cordate, a half wider than long, sides evidently sinuate rather before base, which is slightly wider than apex, its sides not oblique, hind angles rectangular or a little obtuse (not strongly projecting as stated by Bates), without carina, the lateral pore projecting very slightly, median line clearly marked, basal sulcus uninterrupted, crenulate, and without pore, basal margin strigose. *Elytra* moderately depressed, about a half longer than wide, border setulose, rounded at shoulder, and reaching stria 4, striae crenulate, the four inner ones moderately impressed, reaching base, 1 and 2 reaching apex, near which 2 is rather deep and diverges outwards, the rest abbreviated behind, 5 to 7 visible but very faint, 8 deep behind, widely interrupted, but sometimes visible at middle, striole on the middle of the elytron, gently curved, hooked in front, the pore far back, front dorsal pore on interval 6, at about a fourth (both Nieltner and Bates are inaccurate regarding its position, while Motchulsky does not refer to it), hind one in the hook of the striole. Microsculpture of the prothorax and elytra formed by very fine, but quite visible, transverse lines, on the head these are more conspicuous and form very wide meshes. *Protarsi* ♂ with two widely dilated joints

Length, 3-3.25 mm

Distribution CEYLON. Colombo; Kandy (*Uzel*), Dikoya (*G. Lewis*), Trincomali, Bandarawella, and Kanthalay (all *W. Horn*)

Type in the Berlin University Zoological Museum, that of *cinctipennis* in the Moscow University Museum; that of *subvittatus* in the British Museum

Putzeys, while omitting the better known *fasciatus*, includes this species in his table, though from the characters given he seems to have misidentified it

quadrillum-group

421 *Tachys quadrillum*, Schaum

Tachys quadrillum Schaum *, Berl Ent Zeitschr 1860, p 201, Andrewes, Revision, 1925, pp 369 and 372, id. Ins Samoa, iv, I, Col 1927, p 3

Tachys pictipennis Putzeys *, Ann Mus Civ Gen vii, 1875, p 745, Bates, Ann Soc Ent Fr 1889, p 274, Andrewes, Trans Ent Soc Lond 1921, p 178

Tachys spilotus Bates *, Ann Mag Nat Hist (5) xvii, 1886, p 152

Colour black, iridescent, joints 1 and 2 of antennæ (rest brown), legs, margin of prothorax, margin and apex of elytra, with two spots on each elytron, reddish testaceous, the front spot rather large and elongate, the hind one smaller and somewhat transverse

Head with rather wide, shallow furrows, extending on to clypeus, eyes moderately prominent, mentum with two pores, antennæ filiform, joint 2 longer than 3. *Prothorax* subconvex, a half wider than long, sides rounded in front and very faintly sinuate behind, base rather wider than apex, its sides a little oblique, the angles somewhat obtuse and rounded, without carina; basal sulcus finely crenulate, hardly interrupted, and without pore. *Elytra* moderately convex, about a half longer than wide, border setulose and dentate, rounded at shoulder and reaching base of stria 4, two moderately impressed, slightly crenulate dorsal striae, not reaching base, 3 lightly impressed, 4 visible, 5 to 7 obsolete, 1 reaching apex, the others abbreviated behind, 8 deep but widely interrupted at middle, striole on middle of elytron long, curved, hardly hooked, the pore at apical third, front dorsal pore on stria 3, just before middle, hind one just behind front end of striole. *Microsculpture* consisting of fine transverse lines on prothorax and elytra, varying in visibility, head with a reticulation of small isodiametric meshes. *Sternum* prosternum slightly sulcate, metasternal process finely bordered. *Protarsi* ♂ with two dilated joints

Length, 2·6-2·8 mm.

Distribution PUNJAB : Salt Range, Khewra Gorge (*H. S. Pruthi*). MADRAS : Ganjam district, Rambha, and Barkuda I. in Lake Chilka (*N Annandale*), Chatrapur, sea-coast (*C F. C. Beeson*) CEYLON : Colombo (*G Lewis*) ; Welgama (*W. Horn*). ANNAM CHINA FORMOSA PHILIPPINE Is CELEBES. SAMOA

Type in the Berlin Zoological Museum, that of *pictipennis* in the Genoa Civic Museum, that of *spilotus* in the British Museum

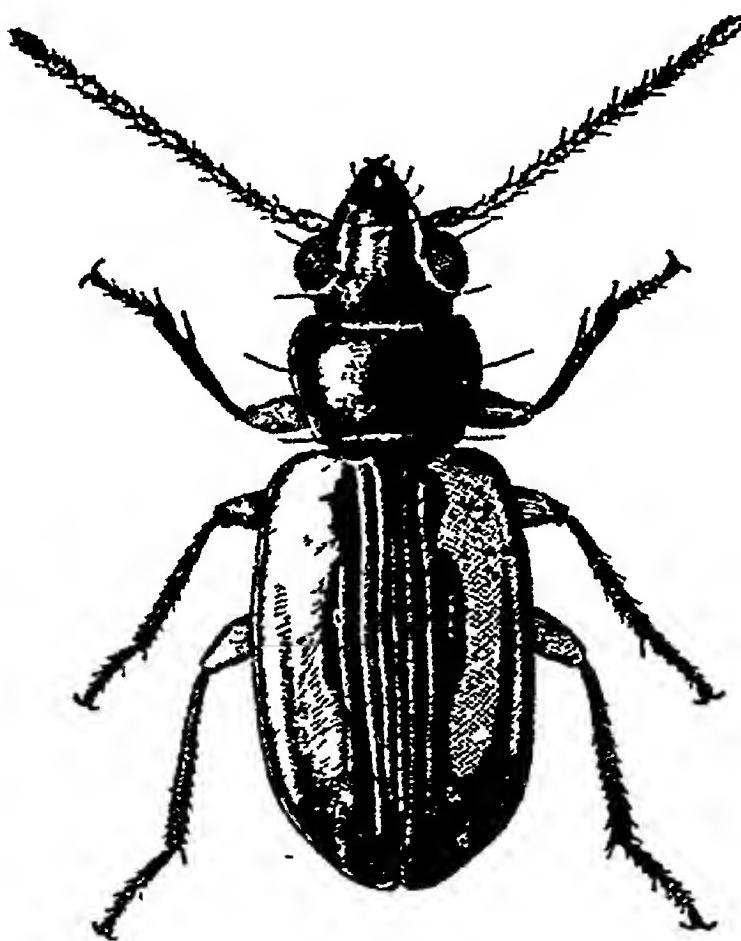


Fig. 39.—*Tachys quadrillum* Schaum.

This is the only species of the group found in the Indian region; it is very variable, especially in the size of the elytral spots. A form is found in the Philippine Islands in which the elytra are entirely black (var. *impictus* Andr.), while in Formosa specimens are found in which the whole insect is of a pale whitish yellow (var. *languidus* Andr.). Dr. Pruthi's examples were taken "in salt-water stream," but there is no evidence that specimens are generally found in association with salt water.

Key to the truncatus-group.

- 1 (2) Mentum without pores, sutural stria
impressed on apical half only; colour
mainly brown Length 1.5 mm . *truncatus*, Nieth , [p. 230.
2 (1) Mentum with two pores
3 (4) Elytra with a distinct apical striole,
colour mainly flavous Length 1.8 mm *ochrias*, Andr , p 232
4 (3) Elytra without a distinct apical striole,
colour mainly piceous Length 1.6 mm. *brachys*, Andr , p. 232.

422 *Tachys truncatus*, Nieth

Bembidium truncatum Nietner *, Ann Mag Nat Hist. (3) u,
1858, p 421
Nestra (?) *truncata* Motchulsky, Bull Mosc 1861, i, p. 100.
Polydernis tenella Motchulsky *, Études Ent xi, 1862, p. 35.
Perigona truncata Fauvel, Rev d'Ent xxvi, 1907, p 101.
Tachys truncatus Andrewes, Revision, 1925, pp 374 and 375, t 4,
ff 20, 28, and 31, id, Tijdschr Ent lxxii, 1929, p 306
Tachys tenellus Andrewes, Revision, 1925, p 498, id, Trans
Ent Soc Lond 1928, p 19

Colour testaceous brown, head and elytra generally darker
than prothorax, palpi, joints 1 and 2 of antennæ (rest darker),
and legs pale testaceous

Head large, not contracted behind eyes, frontal furrows
short, wide, and fairly deep, mentum with two rounded de-
pressions rather than pores; penultimate pore of labial palpi
much dilated, eyes rather small and flat, minutely pubescent,
antennæ short, moniliform, joint 2 considerably longer than 3.
Prothorax moderately transverse, about equally contracted at
extremities, base with its sides oblique, sides rounded in front
and slightly sinuate before base, the hind lateral pore on the
angle, usually projecting a little and breaking the continuity
of outline, the angles somewhat obtuse and reflexed, without
carina, median line fine, front transverse impression very
distinct, basal sulcus shallow, not crenulate, uninterrupted,
without any distinct pore at middle. *Elytra* flat and rather
elongate, depressed in middle behind base, truncate at apex,
shoulders well marked, border setulose and finely dentate,
the setæ long (compared with those on other species), the
denticulations far apart, forming an obtuse angle at shoulder,
and extending inwards and slightly backwards to just beyond
hind angles of prothorax, one dorsal stria, feebly impressed
and hardly crenulate, not reaching base in front, deeper behind
and reaching apex, 2 to 7 obsolete and traceable chiefly by
the appearance of pores, 8 indicated only by large pores,
striole vestigial, though its pore is visible near apex; dorsal
pores fairly distinct on site of stria 3, at about a third and three-
fourths. Microsculpture evident, though not sharply defined,
consisting of transverse lines forming wide meshes on pro-
thorax and elytra, the disk of prothorax practically smooth,

the meshes on head nearly isodiametric. *Sternum*: prosternum with a slight fovea; metasternal process unbordered. Venter setulose. Protarsi ♂ undilated. Some minute setæ round front angles of prothorax and here and there on upper surface.

Length, 1.5 mm

Distribution UNITED PROVINCES. Haldwani (*H. G. Champion*) CEYLON: Colombo; also examples in the Deutsch-

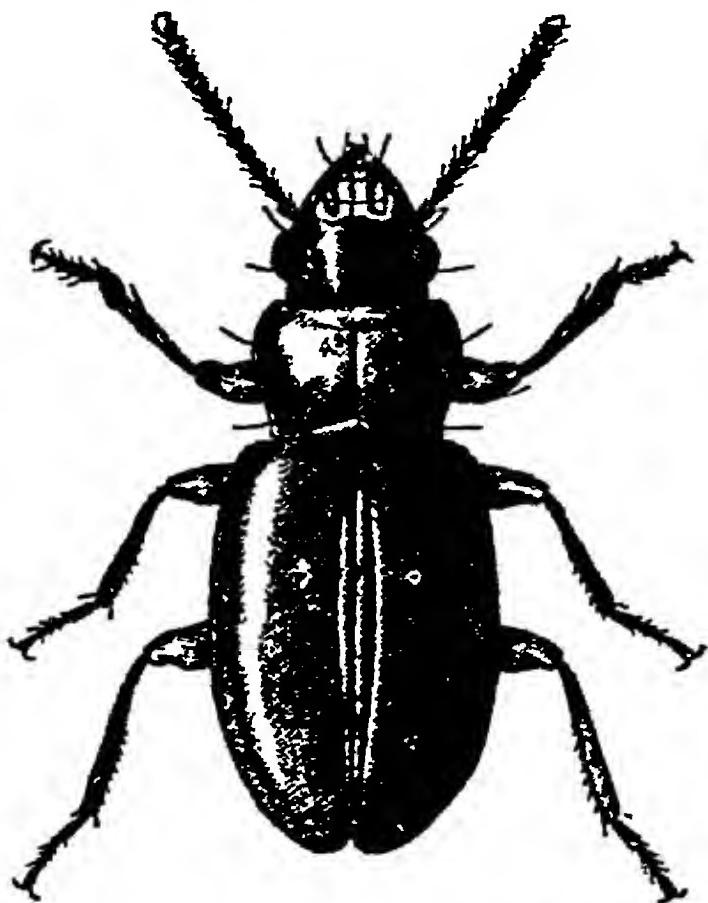


Fig. 40.—*Tachys truncatus* Nietner

Ent. Mus. and Berlin Zool. Mus. BENGAL: Calcutta (*F. H. Gravely*), also examples in the Copenhagen Museum (Galatea Expedition). EASTERN DUARS (*H. Stevens*) BURMA: Shwegu (*H. G. Champion*). MALAY STATES COCHIN CHINA CAMBODIA TONG-KING. JAVA SUMATRA BORNEO. PHILIPPINE IS.

Type in the Berlin Zoological Museum, that of *tenellus* in the Moscow University Museum.

423 *Tachys ochrias*, Andr

Tachys ochrias Andrewes, Revision, 1925, pp. 374 and 376

Colour pale ferruginous, head rather darker, prothorax lighter than elytra, as the elytra are translucent, some vague dark markings are often seen through them, the border and suture being generally darker

Head wide, with short, wide furrows, diverging a little behind, mentum with two pores, eyes small and not prominent, setulose, antennæ short, moniliform, joint 2 much longer than 3. Prothorax slightly convex, transverse, base with its sides very oblique close to hind angles, sides rounded and gently sinuate before base, the angles reflexed and obtuse, without carina, median line very faint, basal foveæ shallow, the sulcus deep, without any crenulation, its sides running forward to form an obtuse angle at middle Elytra depressed, slightly truncate at apex, quite a third wider than prothorax, border minutely dentate and setose, forming a very wide angle at shoulder and extending inwards for some little distance beyond hind angles of prothorax, stria 1 vaguely crenulate, lightly impressed, and not reaching base, 8 traceable only by its large punctures, surface otherwise smooth, but with vague indications of punctures by means of which most of the other striae can be traced, apical striole short but distinct, curved, on middle of elytron, the pore far back near apex, dorsal pores small but clear, on stria 3, at two-fifths and three-quarters Microsculpture formed by very fine transverse lines on the elytra, obsolete on the head and prothorax Body beneath minutely and sparsely setose, prosternum faintly depressed, metasternal process very indistinctly bordered, protarsi ♂ with hardly dilated joints

Length, 1 8 mm

Distribution TEHRI STATE Shripur UNITED PROVINCES : West Almora, Tanakpur, Sarda River Gorge, Haldwani (Nandhaur River), and Siwalik Hills (all *H. G. Champion*), Mussooree and Dehra Dun (*M. Cameron* and *S. N. Chatterjee*), Asan River (*G. D. Bhasin*) EASTERN DUARS (*H. Stevens*) BURMA Moulmein (*Fieber*), Shwebo division, Kyauktan (*H. G. Champion*), a dark variety.

Type in my collection

424 *Tachys brachys*, Andr

Tachys brachys Andrewes, Revision, 1925, p. 377

* *Tachys atomarius* Bates (not Woll.), Ann Mag Nat Hist (5) xvii, 1886, p. 152

Colour prothorax dark red, head and elytra piceous black, palpi, antennæ (darker towards apex), and legs ferruginous

Head with short, wide furrows; *mentum* with two pores, eyes very flat, setulose; *antennæ* moniliform, joint 2 much longer than 3. *Prothorax* slightly convex, not quite a half wider than long, sides of base straight, sides rounded in front and gently sinuate behind, the hind angles sharp, slightly obtuse, and very little reflexed, median line and transverse impressions clearly marked, basal sulcus moderately deep, smooth, uninterrupted, and without pore at middle, the space between it and the margin very uneven. *Elytra* short, wide, and a little convex, evidently dilated behind, only slightly truncate at apex, border minutely setulose and dentate, but only forming a vague angle at shoulder, sutural stria moderately impressed, practically reaching base, hardly crenulate, all the other striae obsolete but generally traceable, stria 8 represented by pores only, striole vestigial; dorsal pores on inner side of site of stria 3, at a third and two-thirds. No appreciable microsculpture.

Length, 1 5-1 65 mm

Distribution UNITED PROVINCES Haldwani (*H. G. Champion*) MADRAS Nilgiri Hills (*H. L. Andrewes*), Palni Hills, shore of Lake Kodaikanal, 6850 feet (*S. W. Kemp*). BURMA Tenasserim (*J. W. Helfer*) BENGAL (Galatea Expedition—Copenhagen Museum) MALAY STATES' Singapore (*C. J. Saunders*), Kuala Lumpur (*H. M. Pendlebury*)

Type in my collection

One of the two examples from Singapore is coloured like the Indian specimens, but the other, though otherwise similar, is dark ferruginous.

I have compared the specimen in the British Museum taken by George Lewis at Bogawantala in Ceylon, and identified by Bates as *T. atomarius* Woll., with the type of that spc. While it is true that the two examples are much alike, I cannot believe that they belong to the same species, if only on account of the extremely fine but distinct microsculpture of the elytra in Wollaston's insect. The head and elytra in the Ceylon specimen are brownish, the prothorax light testaceous. In size and form it agrees rather better with *truncatus* than with *brachys*, but there are pores on the mentum, the microsculpture on the elytra is very faint, while on the head and prothorax it is wanting altogether.

Key to the expansicollis-group

- 1 (2) Front dorsal pore at a sixth from base, colour black, elytra each with two reddish spots, surface shiny Length 2 5 mm
- 2 (1) Front dorsal pore at quite a third from base, surface dull

[p 234]
expansicollis, Bates,

3 (4) One dorsal stria, impressed on apical half only, elytral border glabrous, angulate at shoulder, colour flavous Length 2.8 mm

horni, sp nov, p 235

4 (3) Three fine dorsal striae, elytral border setulose, rounded at shoulder, colour black, elytra each with two white spots, surface sericeous Length 2.4-3 mm

[p 236
bombycinus, Andr.,

425 *Tachys expansicollis*, Bates

Tachys expansicollis Bates *, Ann Mus Civ Gen xxxii, 1892, p 293, Andrewes, Revision, 1925, p. 383

Colour black, very vaguely æneous, antennæ with joints 1 and 2 ferruginous, the rest brown, the reddish elytral spots are small, just behind shoulder and at apical third

Head with duplicated furrows, inner ones deep, semi-circular (convex inwards), extending on to clypeus, outer ones narrower, also deep, and continued behind eye, mentum very short, without pores, penultimate joint of labial palpi much inflated, eyes very prominent, supraorbital pores small, tuberculiform, a little removed from eye and rather near together, antennæ with joint 2 a little shorter than 3. Prothorax convex, cordate, not quite a half wider than long, base slightly bisinuate, its sides turning a little backwards, very strongly contracted in front, so that the angles are adjacent to the neck, the apex much narrower than the base, sides very sharply rounded in front, sinuate at a third from, and then straight to base, the margin rather widely explanate at middle, hind angles right and slightly reflexed, with a strongly marked carina, just inside which on each side is a deep fovea, apex rather faintly bordered throughout, basal sulcus deep, not crenulate, interrupted by the median line, which is deep at that point though not reaching base. Elytra convex, ovate, rather pointed at extremity, border smooth, forming an obtuse angle at shoulder and continuing to rather beyond the hind angles of the prothorax, behind which there is on each side a distinct depression, stria 1 deep throughout, reaching basal pore, 2 just traceable, 8 deep but widely interrupted at middle, apical striole very short and straight, a pore at its termination, round which the surface is depressed, another small pore far back near apex, dorsal pores at about a sixth from base and at middle, on site of stria 3, the front larger than the hind one No evident microsculpture. Prosternum sulcate, metasternum with an arcuate groove in front, protarsi ♂ with two slightly dilated joints

Length, 2.5 mm

Distribution BURMA: Karen Hills (L Fea)

Type in the Genoa Civic Museum This is the only example seen

426 *Tachys horni*, sp nov.

Colour flavous, each elytron with a large, whitish, elongate, oval spot, extending to apex behind, and with a vague brown margin in front, which disappears at middle

Head convex, with very short faint single furrows; mentum without pores; eyes only moderately prominent; antennæ short, joints 1 to 6 moderately long, 2 equal to 3, 7 to 11 a little dilated, submoniliform. *Prothorax* convex, quadrate, a half wider than head, two-thirds wider than long, widest at base, which is slightly arcuate and adjusted exactly to the base of the elytra, front angles rounded and projecting a little

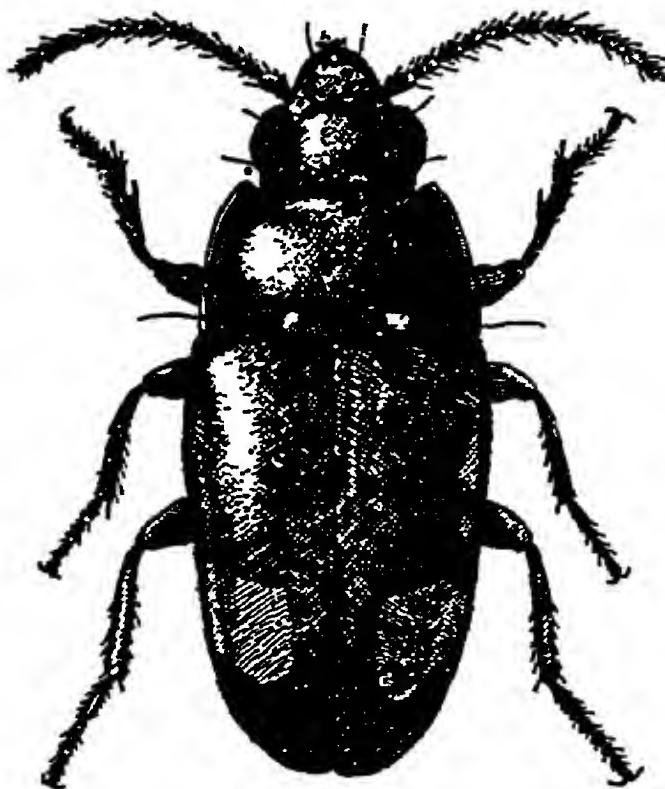


Fig 41.—*Tachys horni*, sp nov

forward, sides evenly rounded from apex to base, hind angles slightly obtuse, blunt but not rounded, without carina; median line and front transverse impression both very faint, the latter indicated by underlying brown pores, basal sulcus very shallow, ending on each side in a small rounded fossa, midway between middle and hind angle, surface impunctate. *Elytra* convex, elongate, widest just behind shoulders and tapering gradually to apex, a fifth wider than prothorax, nearly three-fifths longer than wide, border smooth, angulate at shoulder; stria 1 impunctate, fairly deep on apical half, not nearly reaching base, 2 to 4, and also 1 in front, traceable by underlying brown pores, 8 deep behind as far as middle,

represented in front by three pores just behind shoulder, and another larger one at a fourth from base, striole rather short, curved, ending a little nearer margin than middle, the pore half-way along it, two small dorsal pores on the site of stria 3, at two-fifths and two-thirds respectively, and a pore on each side of scutellum, opposite the prothoracic foveæ Microsculpture distinct, isodiametric throughout Prosternal process sulcate, metasternal process bordered

Length, 2 8 mm

Distribution Ceylon Bentota (W Horn)

Type in the British Museum This is the only example seen

The species is closely related to *T. gestroi* Andr from the Mentawai Islands, but has no very near ally in the Indian fauna

427 *Tachys bombycinus*, Andr

Tachys bombycinus Andrewes, Revision, 1925, p 385

Colour black, upper surface with strong sericeous lustre, prothorax very dark red, joint 1 of antennæ, with base of joints 2 and 3, palpi, and legs ferruginous (femora darker, sometimes almost piceous, tibiae very pale), elytra each with two white spots, front one fairly large, running obliquely backwards from shoulder to stria 2 and tapering a little inwards, a small round apical one bounded inwardly by stria 3

Head small, with single shallow furrows, diverging behind, but with a fine impressed line along inner margin of eye. mentum without pores, eyes not prominent, antennæ long and thick, strongly dilated towards apex, joint 2 shorter than 3. *Prothorax* quadrate, moderately convex, a little less than a half wider than long, sides of base rather oblique, sides with the border minutely setulose, gently rounded in front, then straight to hind angles, which are slightly obtuse but not rounded, with a rudimentary carina, median line very fine, basal sulcus uninterrupted and very deep, with traces of crenulation only, its sides meeting in an obtuse angle at middle at about a fourth from base. *Elytra* rather flat, elongate-ovate, border minutely setulose throughout, rounded at shoulder and extending inwards very little beyond hind angles of prothorax, three very fine dorsal striae, faintly crenulate, with traces of striae 4 to 6, visible chiefly on the front white spot, 1 reaching base, 2 and 3 a little shorter but both fairly long, 2 a little longer than 3, 8 fairly deep near apex but barely reaching half-way to base, and represented in front by one or two large punctures, striole fairly long, curving a little inwards and ending mid-way between margin and suture,

the pore half-way along inner margin ; two small dorsal pores on stria 3 at about a third and two-thirds Prosternum without sulcus, metasternum not grooved in front, though the extremity of the pointed process is depressed, ♂ protarsi with two slightly dilated joints The microsculpture is conspicuous and consists of fine parallel lines, more or less transverse but rather wavy, covering both prothorax and elytra, while on the front and vertex there are nearly isodiametric meshes , the surface also is microscopically punctate

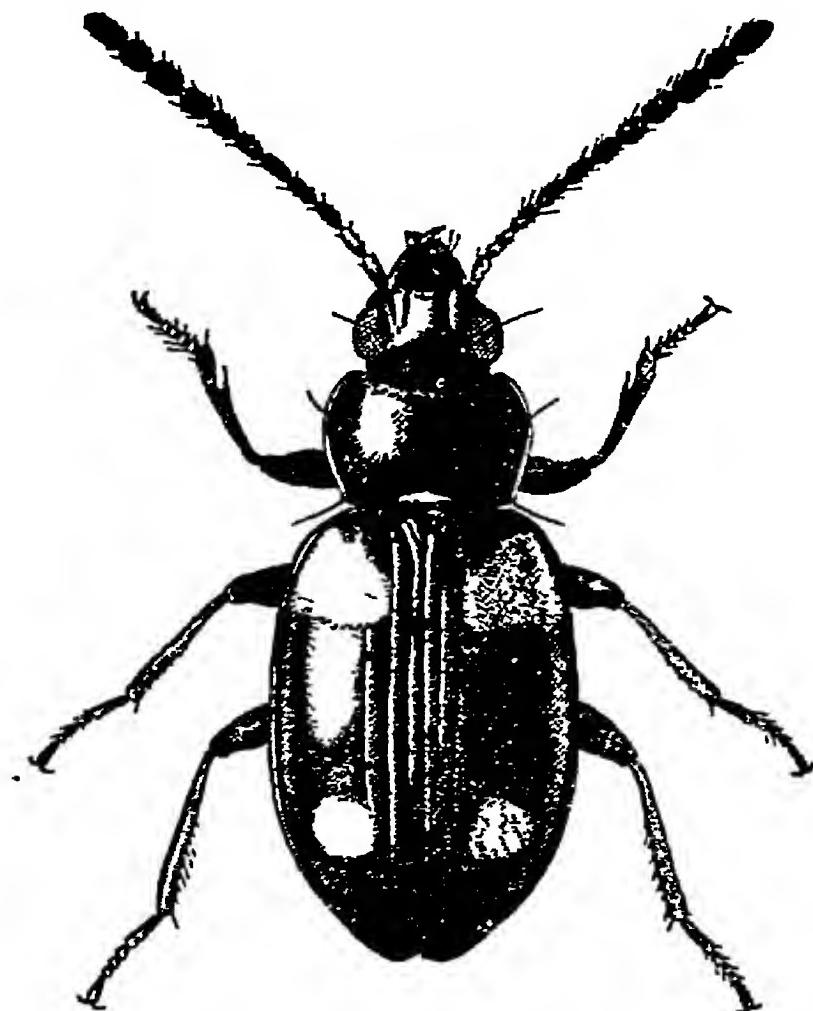


Fig 42.—*Tachys bombycinus* Andrews

Length, 2 4-3 mm

Distribution TEHRI STATE . Shripur UNITED PROVINCES . Tanakpur, Swal River Basin, Sarda River Gorge, Sarju Valley, and Haldwani (Nandhaur River) (all *H G Champion*) , Dehra Dun (*M Cameron*), Rikhi kesh and Asan River (*G. D. Bhasin*), Anarwala BENGAL . Gopaldhara (*H Stevens*) EASTERN DUARS (*H Stevens*)

Type in my collection.

Key to the rhombophorus-group.

428. *Tachys rhombophorus*, Andr

Tachys rhombophorus Andrewes, Revision, 1925, p 390

Colour dark red beneath, head, prothorax, and apical border of elytra pale red-brown, prosternum, palpi, joints 1 to 4 of antennæ, legs, and elytra (including front half of epipleura) ferruginous, rest of antennæ, margin of venter, a large iridescent diamond-shaped spot on elytra, with margin at middle, apex, and apical half of epipleura black.

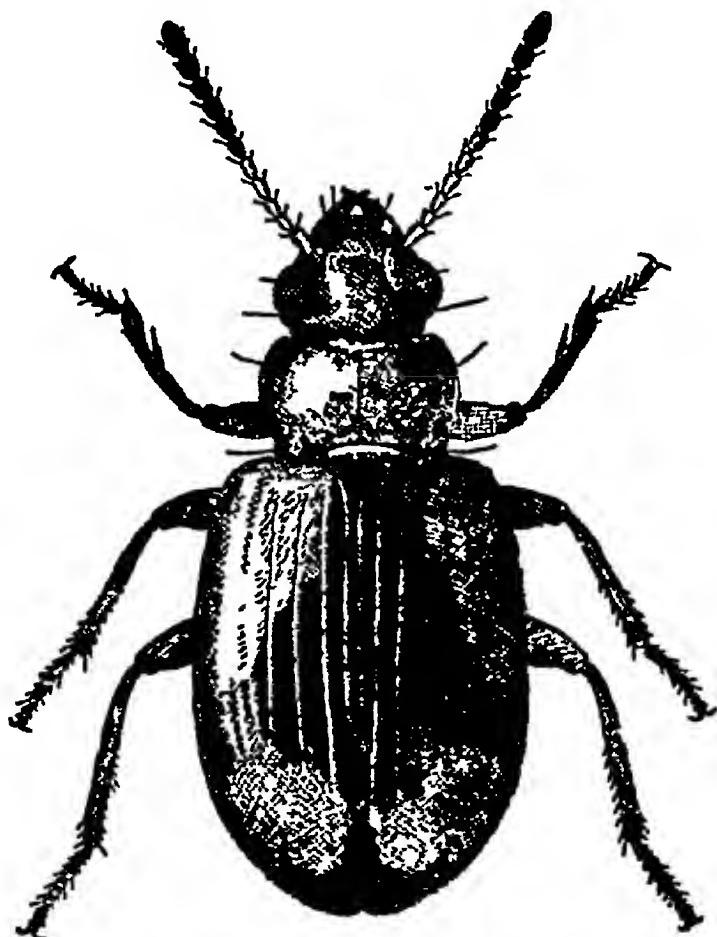


Fig 43.—*Tachys rhombophorus* Andrewes

Head with slight, shallow furrows, diverging a little behind; mentum without pores, eyes moderately prominent, antennæ rather short, submoniliform towards apex, joints 2 and 3 equal. *Prothorax* moderately convex, quadrate, barely a half wider than long, base rather wider than apex, its sides a little oblique, sides rounded in front, nearly straight behind, hind angles right and projecting a little laterally, without trace of carina, median line clearly marked at middle, basal sulcus uninterrupted, faintly crenulate. *Elytra* wide, ovate, moderately convex, border smooth, rounded at shoulder,

hardly extending inwards beyond hind angles of prothorax; striae slightly arcuate (convex outwards), finely crenulate, 1 to 4 moderately deep, 5 lightly impressed, 6 and 7 obsolete, 8 deep behind, rather shallow on basal third, 1 reaching base, the others evanescent before and behind, though all the inner striae are fairly long, striole rather long, curving inwards, and ending a little nearer margin than suture, the pore mid-way along its length, two dorsal pores on stria 3, at about a third and two-thirds Prosternum with a rounded depression in the middle, metasternum with a fine groove in front, ♂ protarsi with two slightly dilated joints. The microsculpture of the elytra consists of very fine, wavy, transverse lines, it is much more conspicuous on the prothorax, on the middle of which there is a reticulation of almost isodiametric meshes; on the head the microsculpture is isodiametric.

Length, 2 75–3 5 mm

Distribution UNITED PROVINCES. West Almora, Ranikhet, Tanakpur, Sarda River Gorge, Haldwani (Nandhaur River), Hardwar (Ganges River), Sarju Valley, and Phandowala (Suswa River) (all *H. G. Champion*), Siwalik Hills (*M. Cameron*), Dehra Dun (*M. Bose*), Song River (*S. N. Chatterjee*), Lachiwala, Dobhalwala, Mothrawala (Rispana River). BENGAL Gopaldhara, Namsoo (*H. Stevens*). SIKKIM: Gielle Khola, and Tarkhola in the Tista Valley (*H. Stevens*) EASTERN DUARS (*H. Stevens*)

Type in my collection

428 a *Tachys rhombophorus* var *evanidus*, Andr.

Tachys rhombophorus var *evanidus* Andrewes, Revision, 1925,
p 65

In the type-form the elytral spot reaches nearly to base and joins both the black apex and side margins, so that the ferruginous marking consists on each elytron of a large triangular shoulder-spot and an oblong apical one between striae 2 and 8. In some specimens, found along with the type-form, and to which the above name has been applied, the black marking on the elytra is much reduced and the central spot becomes a small oblong hardly extending outwards beyond stria 3 or stria 4, though the suture remains infuscate.

Type in my collection

Key to the notaphoides-group.

- 1 (8) Elytral striae clearly punctate and moderately deep, at least on disk, basal sulcus of prothorax distinctly interrupted at middle
- 2 (5) Elytral striae rather coarsely punctate, colour castaneous.

- 3 (4) Antennæ distinctly dilated at apex,
no microsculpture present Length
2 4 mm *dulcis*, Andr , p 240.
- 4 (3) Antennæ hardly dilated at apex,
a distinct microsculpture present
Length 3 5 mm [p. 241
castaneus, Andr ,
- 5 (2) Elytral striae moderately punctate,
colour black, elytra each with two
pale spots
- 6 (7) Elytral spots of moderate dimensions,
front one a little oblique, hind one
rounded, a microsculpture present
Length 2 7-3 5 mm [p 242
micraulax, Andr ,
- 7 (6) Elytral spots large, front ones covering
shoulders, uniting at middle, and
occupying two-fifths of the whole
area, apical spots somewhat oblique,
no microsculpture present Length
2 2-2 8 mm [p 243
octostriatus, Net ,
- 8 (1) Elytra with finely crenulate and rather
shallow striae, outer ones very fine,
basal sulcus of prothorax hardly
interrupted at middle
- 9 (10) Colour mainly brown, basal sulcus
of prothorax without pore at middle
Length 2 5 mm [p 243
notaphoides, Bates,
- 10 (9) Colour mainly bronze-black, median
line at base forming a slight elongate
pore in the middle of the basal sulcus
Length 2 1 mm [spilotus, Bates, p 244
notaphoides var *calli*.

429 *Tachys dulcis*, Andr

Tachys dulcis Andrewes, Revision, 1925, p 395

Colour light brown, margin of prothorax and elytra, with suture of latter, rather darker, antennæ and legs ferruginous, basal joints of antennæ, palpi, and a large, vaguely defined apical spot on each elytron pale ferruginous

Head very small, with flat eyes, frontal furrows short and rather deep, mentum without pores, antennæ submoniliform, joint 2 hardly shorter than 3 Prothorax transverse, sides of base slightly oblique, sides rounded in front, nearly straight behind, a rather wide marginal channel, hind angles projecting on each side as a small rectangular tooth, with a short but distinct carina, median line very fine, the surface near its apex with a small triangular depression, basal sulcus moderately deep, vaguely crenulate, interrupted, and with a large pore at middle Elytra ovate, only moderately convex, border minutely setulose and forming a very distinct dentiform angle at shoulder, thence bent back for a short distance to the base of stria 5, fully striate, the striae moderately deep and distinctly punctate, 1 entire, 2 to 7 only slightly shortened at base, rather more so towards apex, 7 represented chiefly by fine punctures, 8 entire and fairly deep, striae

rather short, on middle of elytron, hooked in front, with the pore half-way along it, dorsal pores on stria 3, at a third and two-thirds, not very conspicuous owing to the punctures in the striae Microsculpture inconspicuous Metasternal process finely bordered; protarsi ♂ with two slightly dilated joints

Length, 2 4 mm

Distribution UNITED PROVINCES Bareilly (*H. G. Champion*).

Type, a single ♂ specimen, in the British Museum

The species has no near allies among those hitherto described.

430 *Tachys castaneus*, Andr

Tachys castaneus Andrewes, Revision, 1925, p 396

Colour chestnut-brown, faintly iridescent, palpi, femora, epipleura, and apical third of elytra lighter. Form rather wide and flat

Head with fairly deep furrows, diverging a little behind, a slight oblong depression on each side between them and eye, both supraorbital pores at some distance from eye; mentum without pores, labrum very distinctly but widely emarginate, eyes flat, antennæ fairly long and slightly dilated towards apex, joint 2 a little shorter than 3, and 3 than 4. *Prothorax* cordate, moderately convex, base bisinuate, its sides curving a little backwards, wider than apex, sides rounded in front and slightly sinuate behind, marginal channel wide, border reflexed, lateral pores very distinct, hind angles right and sharp, with a strongly marked carina, median line rather fine, basal sulcus crenulate, narrow but not deep, interrupted at middle, where there is a large elongate pore which joins the median line. *Elytra* wide, flat, rather pointed at apex, a half wider than prothorax, border smooth, forming a distinct angle at shoulder, but not continued inwards beyond stria 5, which is opposite the hind angle of the prothorax; fully striate, the striae not deep but very clearly punctate, 8 deep behind but hardly more impressed in front than the other striae, 1 reaching basal pore, 2 to 4 not reaching base, 2 to 7 all abbreviated behind, apical striae fairly long and curving slightly inwards in front, ending mid-way between margin and suture, the pore half-way along it; dorsal pores distinct, on inner margin of stria 3, at about a fourth and three-fifths from base. *Prosternal* process longitudinally depressed in middle, metasternal process with a deep arcuate groove close to margin, ♂ protarsi with two slightly dilated joints. The microsculpture of the elytra consists of very fine, almost invisible, transverse lines; on the prothorax it can be clearly seen, the lines which form it being very variable in direction, on the front there are isodiametric meshes

Length, 3 5 mm

Distribution BENGAL Gopaldhara (*H. Stevens*)

Type, a unique ♂ example, in my collection

Superficially a little like *sericeus*, but actually not very nearly related to any other described species

431 *Tachys micraulax*, Andr

Tachys micraulax Andrewes, Rec Ind Mus xxvi, 1924, p 115.
id., Revision, 1925, p 397

Colour black, iridescent, and shiny, palpi, joints 1 to 4 of antennæ (rest fuscous), legs, apical border of elytra, and two fairly large spots on each elytron, the front one a little oblique, the hind one round, ferruginous

Head with indistinctly duplicated furrows, inner ones wide, not very deep, diverging behind, mentum without pores, eyes moderately prominent, antennæ rather slender, slightly dilated towards apex, joint 2 a little shorter than 3. *Prothorax* rather small, cordate, moderately convex, a third wider than long, sides gently rounded in front and equally gently sinuate rather in front of the hind angles, which are slightly acute and projecting, with a short but distinct carina, median line moderately impressed on disk, basal sulcus distant from margin, fairly deep, crenulate, interrupted and with a pore at middle. *Elytra* convex, ovate pointed at apex, three-fourths wider than prothorax, border rounded at shoulder, where one or two minute setæ are visible, and reaching stria 5, fully striate, the striæ moderately deep and punctate, 1 and 8 deep throughout, 2 to 7 almost reaching base but disappearing behind near apex, striole curved, on middle of elytron, the pore half-way along it, dorsal pores distinct, on stria 3, at about a third and three-fifths. Microsculpture of the elytra consisting of very fine transverse lines, that of the head and prothorax isodiametric or nearly so. *Prosternum* narrowly sulcate, metasternal process depressed, with a deep angular groove near the extremity; ventral surface minutely punctulate, last segment ♀ with the four pores in line; protarsi ♂ with two slightly dilated joints

Length, 2 7-3 5 mm

Distribution PUNJAB: Kotkhai, Giri River (*C. F. C. Beeson*). UNITED PROVINCES: West Almora and Upper Gumti Valley (*H. G. Champion*), Chakrata district, Chulli Khud (*S. N. Chatterjee*). BENGAL: Gopaldhara (*H. Stevens*). ASSAM: Garo Hills, Siju Cave, and Someswari River (*S. W. Kemp* and *B. Chopra*); Abor Expedition, Janakmukh (*S. W. Kemp*)

Type in my collection.

432. Tachys octostriatus, Net. [Plate I, fig. 6.]

Tachys octostriatus Netolitzky *, Att Mus Civ. Trieste, xii, 1934,
p 100

Colour of head piceous, prothorax and joints 5 to 11 of antennæ brown, palpi, joints 1 to 4 of antennæ, and legs light ferruginous, elytra, including border, black, the basal two-fifths and a large oblique spot on each towards apex flavous, the resultant dark fascia extending forward a little on each side along intervals 1 and 2

Head convex, with short furrows, diverging behind, two slight carinae on each side between them and front of eyes, which are rather flat, mentum without pores; antennæ extending beyond base of prothorax, slightly dilated towards apex, joints 2 and 3 equal. Prothorax convex, subcordate, about a third wider than head and as much wider than long, base a little wider than apex, sides rounded in front, faintly sinuate before base, hind angles right, with a small but distinct carina, median line rather slight but moderately deep behind, where it separates the two parts of the basal sulcus, which is fairly deep and crenulate, basal foveæ deep and rounded, basal area behind the sulcus finely rugose. Elytra convex, wide-oval, three-fifths wider than prothorax, rather less than a half longer than wide, border smooth, rounding shoulder and ending opposite stria 5, striae entire and rather irregularly punctate, fairly deep on dusk, and 1 deep to apex, the rest disappearing towards apex, and much shallower behind, where 6, and especially 7, are represented by the fine punctures, 8 deep throughout, striole deep, slightly curved, on middle of elytron, the pore a little before middle; two dorsal pores, adjoining stria 3, at two-fifths and two-thirds respectively, a large umbilicate pore on each side of scutellum. No microsculpture. Metasternal process bordered.

Length, 2 2-2 8 mm.

Distribution KASHMIR: Sind Valley, Kangan, Sooroo Basin, Kargil (*L Caporiacco*) BASHAHR. Sangla, 8000 feet (R. N. Parker)

The above description, which is that of the Bashahr example, had already been prepared when Dr. Netolitzky's paper was published. It now appears that there are differences among the few known specimens, both in regard to size and colour, and also in the depth of the elytral striae, but these are evidently individual variations only.

433 Tachys notaphoides, Bates.

Tachys notaphoides Bates, Ann. Mag. Nat. Hist. (5) xvii, 1886,
p 156; Andrewes, Revision, 1925, p 398.

Colour brown, faintly æneous, head and margins of elytra

pieceous, palpi and antennæ black, joint 1 of the latter, with the base of joint 2, and legs ferruginous, each elytron with two vague flavous spots, the front one oblique, the hind one transverse.

Head with short and rather shallow, indistinctly depressed, furrows, mentum without pores, eyes rather flat, antennæ stout, submoniliform, joint 2 equal to 3. Prothorax quadrangular, about a third wider than long, with evenly and gently rounded sides, equally contracted at extremities, with only a suggestion of annulation behind, hind angles slightly obtuse but not rounded with a rudimentary carina, median line fine basal sulcus fairly deep not crenulate, slightly interrupted and without or with only a vague pore at middle basal area a little uneven hind margin minutely longitudinally striate. Elytra oval border minutely crenulose but not perceptibly denticulate, almost angled at shoulder and extending inward to stria 4, fully striate the stria fine and vaguely crenulate, I entire, the rest nearly reaching base in front, abbreviated behind, 6 rather and 7 very faintly impressed, 8 faintly deep throughout, striae moderately long slightly curved, very deep and wide, ending on middle of elytron, the pore a little behind middle, dorsal pores small, on inner side of stria 3, at about a third and two-thirds. Micro-sculpture very clear, isodiametric on head and prothorax, the meshes on the elytra moderately transverse. Prosternum rather flat, not sulcate, metasternal process bordered, prosternum 5 with two moderately dilated joints.

Length, 2.5 mm.

Distribution: Madras. Tranquebar (Galaten Expedition—Copenhagen Museum), Madras (F. H. Gracely). Ceylon. "Dikoya" on label "Kitupalle" in text (G. Lewis).

Type (Ceylon) in the British Museum.

A very isolated species without any near allies.

433a. *Tachys notaphoides* var. *callispilottus*, Bates.

Tachys notaphoides Bates, Ann. Mus. Cr., Gen. xxii, 1872, p. 291.

Tachys notaphoides var. *callispilottus* Adelmann, Recens., 1873, p. 741.

A little smaller and narrower than the type form, head, black in colour, becoming infuscate elytra with smaller and more rounded spots. Head and prothorax similar, but the base of the prothorax has formed an elongate pore at the middle of the basal sulcus and the sides of the prothorax behind show some transverse elevation, the elytra are similar, but, whereas in the type form they are only a half longer than wide, in this variety they are proportionately longer.

Length, 2.22 mm.

Distribution UNITED PROVINCES West Almora, Tanakpur, Haldwani, Jaunsar (*H. G. Champion*) MADRAS Mopad in the Nellore district (*F. H. Gravely*) BENGAL (Galatea Expedition—Copenhagen Museum), Sardah (*F. W. Champion*). BURMA Teinzo (*L. Fea*), North Toungoo, Pyonchaung Reserve (*C. F. C. Beeson*); Kyauktan, Shwebo division (*H. G. Champion*), Tenasserim (*J. W. Helfer*) ANNAM. TONG-KING

Type (Teinzo) in the Genoa Civic Museum

Key to the politus-group.

- 1 (16) Elytra with at least four fairly deep dorsal striae
 - 2 (9) Frontal furrows forming with the clypeal suture a deep, more or less horseshoe shaped impression, six dorsal striae present
 - 3 (8) Prothorax with three distinct pores in the middle of the basal sulcus, stria 7 wanting
 - 4 (7) Prothorax only slightly contracted behind, elytral striae moderately deep
 - 5 (6) Elytra black, each with a small pale spot at apex
 - 6 (5) Elytra reddish, each with a pale stripe along the side
 - 7 (4) Prothorax rather strongly contracted behind, elytra with deep striae, chestnut-coloured, each with a pale ocellate spot
 - 8 (3) Prothorax with the three pores in the middle of the basal sulcus indistinct, a trace of stria 7 opposite the front dorsal pore
 - 9 (2) Frontal furrows and clypeal suture not forming a horseshoe shaped impression
 - 10 (13) Elytra fully striate, without micro-sculpture Length 2.9 mm
 - 11 (12) Elytra each with a pale apical spot
 - 12 (11) Elytra without apical spots
 - 13 (10) Elytra with not more than six dorsal striae, microsculpture present
 - 14 (15) Elytra with six dorsal striae, without spots present Length 2.75 mm
 - 15 (14) Elytra with five dorsal striae, though traces of a sixth stria are sometimes present, each with two pale spots Length 3.25 mm ..
 - 16 (1) Elytra with not more than three dorsal striae
 - 17 (24) Elytra with three impressed dorsal striae
 - 18 (21) Elytra black, each with two pale spots (sometimes wanting), a microsculpture present Length 2.5-2.8 mm
- latus*, Peyr., p. 249
[Andr., p. 250.
latus var. *virgatus*,
- ocellatus*, Bates, p. 251.
- belli*, Andr., p. 251
- klugi*, Nietn., p. 252.
klugi var. *sulcatopunctatus*, Putz p. 253
- chalceus*, Andr., p. 253
- ornatus*, Apetz, p. 254.

- 19 (20) Prothorax a half wider than long, elytra with stria 3 distinctly impressed, at least between the dorsal pores, the pale spots very clear [p 255.
tetraspilus, Sols ,
- 20 (19) Prothorax only a third wider than long, elytra with stria 3 formed by a lightly impressed crenulate line, the pale spots indistinct, sometimes wanting ... [p 256
peryphephimus, Bates,
- 21 (18) Elytra ferruginous, often with a vague dark band across the middle Length 1 8-2 1 mm [p 257.
ceylanicus, Nietn.,
[*porus*, Andr., p 258.
ceylanicus var. *poly-*
- 22 (23) Elytra with two dorsal pores only .
- 23 (22) Elytra with more than two dorsal pores .
- 24 (17) Elytra with not more than two impressed dorsal striae
- 25 (82) Elytra with two dorsal striae, stria 3 sometimes visible, but hardly impressed.
- 26 (77) Basal sulcus of prothorax interrupted at middle
- 27 (54) Basal sulcus of prothorax not, or only indistinctly, crenulate; no micro-sculpture present.
- 28 (29) Elytral stria 1 much deeper than 2, stria 2 arcuate, so that interval 2 is very wide Length 3 5 mm.
- 29 (28) Elytral stria 1 not or hardly deeper than 2
- 30 (33) Elytral stria 2 not extending forward beyond the front dorsal pore
- 31 (32) Elytra dark but suffused with red, with two fairly large pale spots on each, apical joints of antennæ fuscous Length 2 3 mm [p 259.
pæciliopterus, Bates *,
- 32 (31) Elytra black, with small pale spots, antennæ pale Length 2 8 mm [p. 260.
- 33 (30) Elytral stria 2 extending forward beyond the front dorsal pore
- 34 (41) Sides of prothorax not sinuate behind, though the hind angles project on each side as a minute tooth
- 35 (36) Black, iridescent, apex of elytra red, antennæ pale, sides of elytra rounded Length 2 75 mm [p 261.
nalandæ, Andr..
- 36 (35) Black, brown, or dark red, with two pale or reddish spots on each elytron, sides of elytra subparallel
- 37 (40) Elytral stria 1 entire, apical joints of antennæ dark
- 38 (39) Dark red or brown, elytral spots fairly distinct, antennæ rather short, sub-moniliform Length 2 3 mm [p 259.
pæciliopterus, Bates *,
- 39 (38) Black, with vague dark red elytral spots, antennæ long, thick, and black Length 2 75 mm [p 262
malabaricus, Andr .

* This species is included twice in the Key

- 40 (37) Elytral stria 1 not reaching base, elytral spots small, pale, and transverse, antennae pale Length 2.7 mm [p 262
pallidicornis, Andr.
- 41 (34) Sides of prothorax sinuate before the hind angles
tayari, Andr., p 263
- 42 (43) Elytra black, the extreme apex only reddish
sterrensi, Andr., p 263
- 43 (42) Elytra black, but with at least one pale or reddish spot on each
tafer, sp nov., p 264
- 44 (49) Stria 3 invisible
nilgiricus, Andr., sp 265
- 45 (48) Stria 2, viewed from above, extending only a little way before the front dorsal pore
nannodes, Andr., [p 266.
- 46 (47) Stria 2 ending abruptly just before the front dorsal pore, each elytron with two rather large and conspicuous pale spots
ragaburðus, sp nov., [p 266
- 47 (46) Stria 2, viewed from above, hardly reaching the front dorsal pore, though when viewed sideways extending beyond it, each elytron with two small red spots
calermus, Andr., p 267.
- 48 (45) Stria 2, viewed from above, extending well beyond the front dorsal pore, each elytron with two small distinct pale spots
politus var. *aspilatus*, [Andr., p 271
- 49 (44) Stria 3 visible, when the elytra are viewed sideways, between the two dorsal pores
politus, Motch., p 268
- 50 (53) Antennae pale throughout, elytra with small dull reddish spots
stus, Bates, p 270
- 51 (52) Stria 3 fairly distinct (though hardly impressed), and usually extending forward a little beyond the front dorsal pore, elytra vaguely annuous and iridescent each with two dull red spots
politus var. *homostic-*
- 52 (51) Stria 3 faint, visible only between the dorsal pores, elytra black, each with a small apical reddish spot
- 53 (50) Antennae with joints 5 to 11 fuscous, elytra each with two fairly large pale spots, stria 3 faint
- 54 (27) Basal fulcus of prothorax distinctly, though sometimes finely, crenulate
- 55 (66) Dorsal striae crenulate
- 56 (63) Elytra with stria 3 invisible, or at most barely traceable
- 57 (62) Prothorax two thirds wider than long (sometimes less), upper surface usually with an fuscous tinge, dorsal pores of moderate size, a very fine microsculpture present, the head with faint isodiametric meshes
- 58 (59) Elytra unicolorous
politus var. *aspilatus*, [Andr., p 271
- 59 (58) Elytra with reddish spots
- 60 (61) Elytra each with an apical spot
politus, Motch., p 268
- 61 (60) Elytra each with an apical and humeral spot

- 62 (57) Prothorax less than two-thirds wider than long, upper surface black, elytra often reddish at base and apex, each with two pale spots, dorsal pores large, no microsculpture present [p 271.
charactus, Andr ,
- 63 (56) Elytra with stria 3 quite visible, though hardly impressed, surface iridescent, a fine microsculpture present
babaulti, Andr , p 271
- 64 (65) Elytra without spots Length 2 5 mm [p 272.
championi, Andr ,
- 65 (64) Elytra each with two large pale spots Length 3 mm . . .
- 66 (55) Dorsal striae not crenulate
- 67 (76) Sides of prothorax sinuate, if at all, close to hind angles, form moderately convex Length not exceeding 2 8 mm
- 68 (75) Elytra each with two pale spots, sometimes vaguely defined.
- 69 (74) Frontal furrows duplicated
- 70 (73) Elytral spots pale and fairly distinct, antennæ pale, submoniliform
- 71 (72) Elytra black, sides of prothorax gently sinuate near the hind angles Length 2 5 mm
charis, Andr , p 273
- 72 (71) Elytra red, sides of prothorax hardly sinuate near the hind angles Length 2 2 mm [Andr , p 274.
charis var *rubescens*,
- 73 (70) Elytral spots vague, dull red, antennæ filiform, with the apical joints fuscous Length 2 75 mm [p. 274.
finitimus, Walk , [p 275
- 74 (69) Frontal furrows triplicated, elytra reddish, antennæ pale
striatifrons, Andr ,
- 75 (68) Elytra very dark red, without spots Length 2 5 mm
blandus, Andr , p 276
- 76 (67) Sides of prothorax strongly sinuate at some little distance from the hind angles, form convex, elytra black, each with two pale spots Length 3 3 mm
- 77 (26) Basal sulcus of prothorax uninterrupted, though a small pore is sometimes visible at middle
euerdes, Bates, p 277
- 78 (79) Upper surface black, femora infuscate Length 2 3 mm [p 277.
nigellus, sp nov ,
- 79 (78) Upper surface brown or ferruginous, legs pale throughout
- 80 (81) Colour brown-red, elytra each with two pale transverse spots, stria 3 invisible, basal sulcus of prothorax without pore at middle Length 2 mm [p 278.
decoratus, Andr ,
- 81 (80) Colour pale ferruginous, elytra pale at base and each with a pale transverse spot at apex, stria 3 and even stria 4 just visible, basal sulcus of prothorax with a small pore at middle Length 1 85 mm
clutus, sp. nov , p 278
- 82 (25) Elytra with only one dorsal stria

- 83 (88) Basal sulcus of prothorax interrupted and with a pore at middle
- 84 (87) Elytra very convex, mainly black, basal sulcus of prothorax with a deep pore or fovea at middle
- 85 (86) Elytra black, each with two pale spots, basal sulcus of prothorax with a rounded pore at middle Length 3 mm
- 86 (85) Elytra piceous, the apical third more or less ferruginous, basal sulcus of prothorax with an elongate fovea at middle Length 2 4 mm
- 87 (84) Elytra moderately convex, ferruginous, the suture darker, basal sulcus of prothorax with a slight narrow pore at middle Length 2 5-3 mm
- 88 (83) Basal sulcus of prothorax uninterrupted and without pore at middle Length about 2 2 mm
- 89 (90) Elytra dark red, each with two large pale spots
- 90 (89) Elytra black, each with two vague dark red spots

[*sculptus*, Andr., p 266.
nilgiricus var *uni-*

[p 279.
thlibodes, sp nov ,

[p 280.
suturalis, Motch ,

unitarius, Bates, p 281.
[var. nov , p 281.
unitarius var *scolodes*,

434 Tachys latus, Peyr

Tachys sulcatus Motchulsky * (not Putzeys), Bull Mosc 1851, n, p 509, Putzeys, Ann Mus Civ Gen vii, 1875, p 740; Andrewes, Trans Ent Soc Lond 1919, p 199, id, Trans Ent Soc Lond 1928, p 5

Tachys latus Peiron, Ann Soc Ent Fr 1858, p 364 t 9, f. 3, Bates, Ann Soc Ent Fr. 1889, p. 275, id, Ann Mus Civ Gen xxxii, 1892, p 293, Matan, Acta Soc Ent Čech xxx, 1933, pp 319-20, Netolitzky, Att Mus Civ Trieste, xli, 1934, p 100

Tachys jurecekii Reitter *, Ent Blätt iv, 1908, p 50
Tachys aratus Andrewes, Revision, 1925, p 408

Colour black, upper surface often with an æneous tinge and occasionally suffused with deep chestnut, apex of elytra light red, palpi, antennæ, legs, and an apical round spot on each elytron between striæ 2 and 8 flavous, antennæ darker towards apex, sometimes fuscous

Head with duplicated furrows, the outer ones slight, the inner ones forming with the clypeal suture a rather deep horse-shoe-shaped impression (convex forwards), a little flattened in front, the ends generally curving a little inwards behind; mentum without pores; eyes rather flat, joints 2 to 4 of antennæ equal, apical joints moniliform. Prothorax convex, about a third wider than long, base truncate, much wider than apex, sides rounded in front but nearly straight, and very little contracted behind, the faintest possible sinuation before hind angles, which are slightly obtuse but not rounded, with a clearly marked carina, median line very faint or wanting, basal sulcus moderately impressed, not crenulate, interrupted,

and with three large pores at middle, the foree small but fairly deep. *Elytra* convex, elongate, not much wider than prothorax, with parallel sides. border smooth, forming an obtuse angle at shoulder and extending inwards to a point opposite stria 4; six fairly deep, impunctate dorsal striae though with traces of minute crenulation, 1 reaching apex and also base, where it curves round in a deep groove to the basal pore 2 to 4 and 6 not nearly reaching base, 5 extending rather further forward and ending in a punctiform impression, 2 to 6 just reaching apical spot behind. S very deep. striae rather short and straight, ending much nearer margin than suture a distinct ridge between it and stria S. the pore rather far forward; dorsal pores minute, on inner margin of stria 3, at basal third and just behind middle. Surface smooth and very shiny, without microsculpture. Prosternum sulcate, metasternum with a small but deep arcuate groove in front: protarsi ♂ with two very slightly dilated joints.

Length 24-3 mm.

Distribution. KASHMIR: Sind Valley, Kangar (*L. Capriacco*). UNITED PROVINCES: West Almora, Kosi River (*Ranikhet*), Tanakpur, Sarda River Gorge, Haldwani (all *H. G. Champion*): Fyzabad (*R. W. G. Hingston*) ? Ceylon (*F. Walker* coll. in Brit Mus.). BIHAR: Pusa (*M. Cameron* and *N. P. Nandi*). BENGAL: Calcutta (*F. H. Grady*): Sardah (*F. W. Champion*). BURMA: Bhamo (*L. Fea*): Ruby Mines (*Doherty*): Kyauktan (*H. G. Champion*): Moulmein (*Fieber*); Tenasserim (*J. W. Helfer*); Tavoy (*R. N. Parker*). SUMATRA. CAMBODIA. TONG-KING. ANNAM. ASIA MINOR. KURDISTAN.

Type not traced: that of *sulcatus* in the Moscow University Museum; that of *jurečki* in Dr. Jureček's collection.

Burmese examples are rather more brassy than Indian ones and have the prothorax a little more contracted behind.

434 a. *Tachys latus* var. *virgatus*, Andr.

Tachys orat. var. virgatus Andrewes, Revision, 1925, p. 410.

Lighter than the typical form, with pale antennae. venter light red, elytra red, with a dark circle round the apical spots, which are yellow-white, the colour extending along intervals 7 and 8 up to and over the shoulder.

Distribution. BENGAL: Sardah (*F. W. Champion*)

Type in the British Museum.

Another Bengal specimen in the Copenhagen Museum is darker, but the spots are similarly united; in two specimens from Pusa the light stripe is interrupted at middle.

A rather larger form (3 mm. long) occurs in Indo-China, wider than the typical form, the prothorax more contracted

behind, the frontal furrows and elytral striae both deeper, the elytra often suffused with dark red, the apical spot larger, and less clearly defined. This is named var *vigens* Andrewes (Revision, 1925, p. 410), and the type is in the Paris Museum.

435 *Tachys ocellatus*, Bates

Tachys ocellatus Bates *, Ann Mus Civ. Gen. xxxii, p 292,
Andrewes, Revision, 1925, p 410

Colour chestnut-red, antennae, palpi, and legs pale ferruginous, elytra with a pale apical spot on a dark background.

Head with duplicated furrows, outer ones short and deep but uneven, inner ones forming with the clypeal suture a deep horseshoe-shaped impression, mentum without pores, eyes not prominent, antennae short and slender, joint 2 equal to 3. Prothorax convex, only a fourth wider than long, very little wider at base than at apex, sides narrowly bordered, evenly rounded, and slightly sinuate just before the hind angles, which are right, with only a rudimentary carina; basal sulcus fairly deep, smooth, widely interrupted, with a pore at middle, the inner ends of the two parts depressed, so that from above there appear to be three pores, the foveæ wide and rounded. Elytra convex, elongate-oval, border smooth, subangulate at shoulder, and extending inwards to a point nearly opposite stria 4, six fairly deep impunctate dorsal striae, which terminate very abruptly in front, 1 entire, 2 to 6 much abbreviated behind, 2 disappearing at a sixth from base, 2 to 5 gradually increasing in length in front, 6 a little shorter than 5, 7 wanting, 8 deep throughout, striole short and straight, much nearer margin than suture, the pore rather in front of middle; dorsal pores small, on stria 3, at a third and three-fifths. No microsculpture

Length, 2 6 mm

Distribution ASSAM Naga Hills, 5000 feet (S N Chatterjee)
BURMA Teinzo (*L Fea*)

Type (Teinzo) in the Genoa Civic Museum

Closely allied to *latus*, but smaller and chestnut-red. The frontal impression is rounded in front, deeper, and narrower, the clypeus convex, the prothorax narrower and more contracted behind, the elytra shorter, less parallel, more rounded at shoulder, the striae deeper

436 *Tachys belli*, Andr.

Tachys belli Andrewes, Revision, 1925, p 411

Colour black antennæ, palpi, and legs very dark ferruginous, each elytron with apex and a large dull apical spot reddish

Head with duplicated furrows, outer ones short, inner ones longer, fairly deep, sinuate, curving inwards behind, clypeal suture deep, mentum without pores, eyes not prominent, antennæ slight, joints 2 and 3 equal. *Prothorax* convex, a half wider than long, base considerably wider than apex, sides gently rounded in front, sinuate rather before hind angles, which are slightly obtuse, with a small straight carina, basal sulcus shallow, smooth, widely interrupted, the three central pores, present in the allied species, indistinct. *Elytra* convex, with parallel sides, border smooth, angulate at shoulder, extending inwards to a point opposite stria 4, six moderately impressed impunctate dorsal striae, not ending abruptly in front, 1 entire, 2 practically reaching base and extending to a sixth from apex, 3 to 6 not quite reaching base and much shortened behind, 5 extending forward a little in front of the others and ending in a punctiform impression, a rudiment of 7 present opposite front dorsal pore, 8 deep throughout, striole short and deep, much nearer margin than suture, the pore in front of middle, dorsal pores on stria 3 at a third and three-fifths. No microsculpture. *Prosternum* deeply sulcate, metasternum with a transverse arcuate groove in front.

Length, 27 mm

Distribution SIND. Karachi (T. R. D. Bell).

Type in my collection.

Very near *latus*, but quite clearly differentiated by various characters, including a vestige of stria 7, which is present in all the specimens examined.

437. *Tachys klugi*, Nietn

Bembidium klugi Nietner *, Ann Mag Nat Hist (3) II, 1858, p. 423

Tachys sulcatus Putzeys, Ann Mus Civ Gen vn, 1875, p. 743, Bouchard, Ann Soc Ent Fr 1903, p. 170

Tachys euglyptus Bates *, Trans Ent Soc Lond 1883, p. 268; Andrewes, Ann Mag Nat Hist (9) III, 1919, p. 472

Tachys klugi Bates, Ann Mag Nat Hist (5) xvii, 1886, p. 155, id, Ann Mus Civ Gen. xxxii, 1892, p. 291, Andrewes, Revision, 1925, p. 414, t. 3, f. 6, id, Tijdschr Ent lxxii, 1929, p. 306

Tachys feanus Bates *, Compt rend Soc Ent Belg 1891, p. 326, id, Ann Mus Civ Gen. xxxii, 1892, p. 292, Andrewes, in Mission dans les Provinces Centrales de l'Inde and dans la region occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p. 19

Colour brassy, very shiny, more or less brown beneath, joints 1 to 3 of antennæ and legs ferruginous, the femora sometimes infuscate, elytra each with a small pale oblique apical spot.

Head with nearly parallel, duplicated frontal furrows diverging slightly behind, mentum without pores, eyes not

prominent; antennal joints 2 and 3 equal. *Prothorax* convex, nearly two-thirds wider than long, base much wider than apex, sides gently rounded in front, faintly sinuate near base, hind angles right, with a very conspicuous carina, bounded inwardly by a rounded fovea; median line rather slight, basal sulcus deep, strongly crenulate, not interrupted, and with a large elongate pore at middle. *Elytra* convex, ovate, pointed at apex, border smooth, angulate, extending inwards and backwards to a point mid-way between striae 4 and 5; fully striate, the striae deep, wide and clearly punctate, 1 reaching apex and very nearly reaching base, the rest shortened at extremities, 5 reaching nearest to base and 2 to apex, 8 entire and very deep, striae deep and nearly straight, a little nearer margin than suture, the pore half-way along it, dorsal pores rather indistinct, on stria 3, at about a fourth and just behind middle. No microsculpture. *Prosternum* slightly sulcate, metasternal process with a transverse arcuate groove.

Length, 2 75-3 mm

Distribution. SOUTH-EAST ASIA. Common throughout India, Ceylon, Burma, the Malay Peninsula and Archipelago, Indo-China, and the Philippine Islands, extending northwards as far as Japan

Type in the Berlin University Zoological Museum, that of *sulcatus* not traced, that of *euglyptus* in the British Museum, that of *seanus* in the Genoa Civic Museum

437a *Tachys klugi* var. *sulcatopunctatus*, Putz

Tachys sulcatopunctatus Putzeys *, Ann. Mus. Civ. Gen. vii, 1875, p. 712, Bates, Ann. Mus. Civ. Gen. xxxii, 1892, p. 292; Bouchard, Ann. Soc. Ent. Fr. 1903, p. 170
Tachys klugi Nietner var. *sulcatopunctatus* Andrewes, Revision, 1925, p. 414

The variety only differs from the typical form in the absence of an apical spot

438 *Tachys chalceus*, Andr

Tachys chalceus Andrewes, Revision, 1925, p. 415

Colour deep bronze, joints 1 to 4 of antennæ (rest brown), basal joints of palpi, and legs flavous

Head with short, slight, duplicated furrows, mentum without pores, eyes moderately prominent; antennæ short and slender, joints 2 and 3 equal. *Prothorax* convex, two-thirds wider than long, base much wider than apex, sides strongly contracted in front, hardly at all behind, without sinuation before base, hind angles right, the carina short but evident; basal sulcus rather fine and not very deep, finely punctate, not interrupted, and with the pore at middle

hardly larger than the others. *Elytra* short-ovate, very convex, border smooth, angulate at shoulder and extending inwards to a point half-way between striae 4 and 5, six deep impunctate dorsal striae, 1 entire, 2 to 6 shortened behind, 2 reaching base, 3 to 5 disappearing a little before base, 6 rather shorter, 4 to 6 all turning slightly outwards in front, 7 wanting, 8 deep throughout, striole curved, on middle of elytron, the pore half-way along it; dorsal pores minute, on stria 3, at a third and three-fifths, only visible under strong magnification. Microsculpture very distinct, elytra with the meshes moderately transverse, head and prothorax with isodiametric meshes. Prosternum not sulcate, metasternal process transversely grooved.

Length, 2 75 mm

Distribution UNITED PROVINCES West Almora and Haldwani (*H. G. Champion*)

Type in the British Museum

Very similar to *æneus* Putzeys, which is found in the Malay Archipelago, but in that species striae 6 and 7 are both wanting.

439 *Tachys ornatus*, Apetz

Bembidium ornatum Apetz, Col Brehm, 1854, p 12

Bembidium orientale Nietner *, Ann Mag Nat Hist (3) u, 1858, p 425

Tachys ornatus Schaum, Berl Ent Zeitschr 1863, p 92, Bates, Ann Soc Ent Fr 1889, p 275, Kuntzen, Mitt Zool Mus Berl ix, 1919, p 154, Andrewes, Rec Ind Mus xxii, 1921, p 341, id., Revision, 1925, p 416, t 4, f 24; id., Fauna of British India, Carabidæ, i, 1929, p 16, f 4a

Tachys orientalis Bates, Ann Mag Nat Hist (5) xxii, 1886, p 156

Colour brassy. joints 1 to 3 of antennæ (rest fuscous) and legs ferruginous, two spots on each elytron flavous, the front one extending inwards to stria 5, the hind one to stria 3

Head with rather short, straight, duplicated furrows; mentum without pores, eyes moderately prominent, antennæ rather short and a little dilated at apex, joints 2 and 3 equal. *Prothorax* rather convex, a half wider than long, strongly contracted towards apex, but not at all behind, the sides, which have rather a thick border, running straight backwards from middle to hind angles, which are right, with a well-marked carina, bounded inwardly by an elongate depression, basal sulcus not very deep, clearly crenulate, barely interrupted, but with a pore at middle, a small fovea on each side half-way between middle and margin. *Elytra* moderately convex, with parallel sides, not much wider than prothorax, a half longer than wide, border smooth, angulate at shoulder, and extending inwards to a point half-way between striae 4 and 5; five fairly deep dorsal striae, not crenulate, 6 often visible as a

fine line on the middle of the elytron, 8 deep throughout, striole short and straight, rather nearer margin than suture, the pore half-way along it, dorsal pores small and indistinct, on stria 3, at a fourth and rather behind middle. Micro-sculpture fine but distinct, the meshes isodiametric on head and prothorax, moderately transverse on the elytra. Prosternum slightly sulcate, metasternal process with a transverse arcuate groove.

Length, 3-3.5 mm.

Distribution UNITED PROVINCES Dehra Dun (*M. Cameron* and *J. C. M. Gardner*), Asan River (*G. D. Bhasin*) Phandowala, Suswa River, West Almora Jaunsar, and Hardwar, Ganges River (*H. G. Champion*), Fyzabad (*R. W. G. Hingston*) CENTRAL PROVINCES Nagpur, Hoshangabad, and Chiria-dongra (*E. A. d'Abreu*) MADRAS Madras (*F. H. Gravely*); Barkuda Island in Lake Chilka (*N. Annandale* and *F. H. Gravely*); Trichinopoly (*R. O. Jermyn*); Madura (*R. B. Wright*). MYSORE Chikkaballapura (*T. V. Campbell*) CEYLON Colombo (*G. Lewis*), Hambegamuwa, Elephant Pass (*G. M. Henry*), Anuradhapura (*W. Horn*) BIHAR and ORISSA Ranchi (*W. H. Irvine*), Puri (*S. W. Kemp*) PHILIPPINE Is. ADEN YEMEN SUDAN. ABYSSINIA DAMARALAND A specimen from Motchulsky's collection is labelled "Sicily," probably in error.

Type not traced, that of *orientalis* in the Zoological Museum of the Berlin University.

440 *Tachys tetraspilus*, Solsky

Tachys tetraspilus Solsky, in Fedchenko's Reise in Turkestan, II, pt 5, 1874, p 114, Reitter, Deutsch Ent Zeitschr. 1894, p. 33, Andrewes, Revision, 1925, p 443, id, Journ Bomb Nat Hist Soc XXXV, 1932, p 862

Colour black, slightly iridescent, underside piceous brown; palpi, joints 1 and 2 of antennæ (rest fuscous), and legs ferruginous, each elytron with two flavous spots, an oblong one on shoulder, a round one towards apex.

Head with short, parallel, vaguely duplicated furrows, mentum without pores, eyes moderately prominent; antennæ rather short and stout, joints 2 and 3 equal. *Prothorax* fully a half wider than long, base a little wider than apex, sides lightly rounded in front, very moderately contracted and only faintly sinuate before base, hind angles slightly obtuse but sharp, with a short carina, median line faint, basal sulcus moderately deep, crenulate, just interrupted, the pore at middle not very distinct from the general crenulation. *Elytra* ovate, moderately convex, border smooth and extending inwards some little way beyond hind angles of

prothorax, three dorsal striae, not crenulate, diminishing in length outwards, 1 entire, 2 extending a little beyond first dorsal pore in front, both 2 and 3 extending far beyond the second one behind, 3 as seen from above limited by the front pore, but, viewed sideways, traceable nearly to base, 4 just visible, 8 entire but not quite so deep as in most of the allied species, striole fairly long and gently curved to middle of elytra, the pore half-way along it, dorsal pores small, on stria 3, at about a third and three-fifths Microsculpture faint, formed by fine transverse lines, just visible on the elytra, obsolete on disk of the prothorax, the head with a slight reticulation of moderately transverse meshes Prosternum only faintly depressed at middle, metasternal process with a sharply curved arcuate groove behind it

Length, 2 8 mm

Distribution BIHAR Pusa UNITED PROVINCES Dehra Dun, DOBHALWALA PUNJAB Lyallpur (K N Trehan) WAZIRISTAN TURKESTAN TRANSCASPIA

Type in the University Zoological Museum, Moscow.

441 *Tachys peryphinus*, Bates

Tachys peryphinus Bates *, Ann Mag Nat Hist (5) xvii, 1886,
p 153, Andrewes, Revision, 1925, p 435

Colour black or piceous, with an æneous tinge, joints 1 to 3 of antennæ (rest brown) and legs flavous, penultimate joint of palpi fuscous, two faint pale spots (sometimes wanting) on each elytron

Head with short, indistinctly duplicated furrows, diverging slightly behind, mentum without pores, eyes not prominent, antennæ submoniliform, joints 2 and 3 equal *Prothorax* moderately convex, a third wider than long, base a little wider than apex, sides very gently rounded and sinuate just before the hind angles, which are right, with a distinct carina, median line very fine, basal sulcus fairly deep, finely crenulate, interrupted, and with a pore at middle *Elytra* moderately convex, slightly pointed at apex, border smooth, rounded at shoulder and extending inwards a little beyond hind angles of prothorax, three finely crenulate dorsal striae, 1 entire, but all (though subinterrupted) nearly reaching base, 2 shortened behind, 3 not extending backwards beyond hind dorsal pore, 1 and 2 fairly deep, 3 very lightly impressed and very clearly crenulate, 4 just visible, 8 deep throughout, striole rather short, on middle of elytron, the pore half-way along it, dorsal pores distinct, on stria 3, at a third and three-fifths Microsculpture of the elytra and prothorax fine but quite distinct, consisting of fine transverse lines, rather more visible on the latter than the former, vertex with isodiametric

meshes. Prosternum rather deeply sulcate, metasternum with a fairly deep arcuate groove behind the process

Length, 2.8 mm.

Distribution. CEYLON. Kitugalle (*G. Lewis*) ; Nalanda (*W. Horn*)

Type in the British Museum.

442. *Tachys ceylanicus*, Niels.

Bembidium ceylanicum Nietner *, Ann Mag Nat Hist (3) ii, 1858, p 423

Tachys flaviculus Motschulsky *, Études Ent viii, 1859, p 39;

Putzeys, Ann Mus Civ Gen vii, 1875, p 746, Andrewes, Trans Ent Soc Lond 1919, p 198, id, Trans Ent, Soc Lond 1928, p 18

Tachys anceps Putzeys *, Ann Mus Civ Gen vii, 1875, p 742

Tachys insans Bates *, Ann Mag Nat Hist (5) xvii, 1886, p 154, id, Ann Mus Civ Gen xxxii, 1892, p 294

Tachys ceylanicus Andrewes, Revision, 1925, p 436, id, Tijdschr Ent lxxii, 1929, p 307

Colour ferruginous, palpi, joints 1 to 3 of antennæ, and legs a little lighter, elytra usually with a vague dark band across the middle

Head with fairly deep, but short, inner furrows, slightly divergent behind, outer ones obsolete, mentum without pores; eyes not prominent, antennæ submoniliform, joints 2 and 3 equal. Prothorax cordate, moderately transverse, about equally contracted at extremities, sides rounded in front and sinuate at some little distance from base, the angles right, with a short slight carina; median line fine, basal sulcus fairly deep, hardly crenulate, interrupted and with a pore at middle (practically with two others, one on each side, owing to the deepening of the basal sulcus at those points), basal foveæ small but deep, just inside the carina. Elytra with the border minutely setulose (but the setæ are so small and fugitive that they are very difficult to see), hardly angulate at shoulder, extending inwards and slightly backwards to a point just beyond hind angles of prothorax; three fairly deep crenulate dorsal striae, 4 to 7 obsolete, 1 entire, 2 and 3 shortened at extremities, 8 deep and entire though a little shallower at middle, striae not very long, curving inwards in front and ending on middle of elytron, the pore about half-way along it; dorsal pores on stria 3, at about a fourth and a little behind middle. No microsculpture. Prosternum with a small rounded depression, metasternal process strongly bordered, protarsi ♂ with two joints hardly perceptibly dilated.

Length, 1.8-2 mm.

Distribution. UNITED PROVINCES: West Almora (*H. G. Champion*) ; Dehra Dun (*A. K. Sharma*) and Nim Nadi (*M. Cameron*) *MYSORE.* Teppukadu (*H. L. Andrewes*). *CEYLON:*

Colombo (*J. Nietner*), Kandy (*G. Lewis*), Trincomali (*W. Horn*) BENGAL Calcutta (*F. H. Gravely*), Gopaldhara (*H. Stevens*) SIKKIM Gielle Khola in the Tista Valley (*H. Stevens*) EASTERN DUARS (*H. Stevens*) BURMA Tenasserim (*J. W. Helfer*), Karen Mountains and Senmigion (*L. Fea*) MALAY STATES JAVA SUMATRA, CELEBES PHILIPPINE Is ANNAM HONGKONG

Type in the Berlin University Zoological Museum, that of *flaviculus* in the Moscow University Zoological Museum, that of *anceps* in the Brussels Museum, that of *infans* in the British Museum

The area of distribution is a wide one, and, as we should anticipate, both size and form show a good deal of variability

442a *Tachys ceylanicus* var *polyporus*, Andr.

Tachys ceylanicus *Nietner* var. *polyporus* Andrewes, Revision, 1925, p. 437.

In some specimens the dorsal pores are larger and more numerous than in the type-form, though very variable in size, number, and position. As a rule, there are three or four along the course of stria 3 and a very large one on stria 4 or interval 5 at about a fourth from base; between this pore and the base of stria 3 there are sometimes one or two other large pores

Length, 2 mm

Distribution UNITED PROVINCES. West Almora, Tanakpur, Haldwani (Nandhaur River), and Chilla (Ganges River) (all *H. G. Champion*), Dehra Dun (*M. Cameron* and *J. C. M. Gardner*) TEHRI STATE Shripur

Type in the British Museum

443 *Tachys arcuatus*, Putz

Tachys arcuatus Putzeys, Ann. Mus. Civ. Gen. vii, 1875, p. 744, Andrewes, Trans. Ent. Soc. Lond. 1922, p. 247, id., Revision, 1925, p. 438

Colour black to dark red, joints 1 to 4 of antennæ (rest fuscous), legs, and two rather small elytral spots ferruginous (shoulder-spot wanting in the type)

Head with short, deep, frontal furrows, almost foveolate, not duplicated, mentum without pores; eyes moderately prominent, joint 2 of antennæ almost as long as 3. *Prothorax* convex, quadrate, not quite a third wider than long, base a little wider than apex, sides very gently rounded, not sinuate except that the hind angles project slightly as a sharp tooth, the carina rudimentary; median line very fine, basal

sulcus fairly deep, nearly smooth, widely interrupted, and with a large pore at middle, but the two parts are deeper at their inner extremities, so that from above there appear to be five pores, of which the outer ones (the basal foveæ) are the largest. *Elytra* convex, border smooth, rounded at shoulders, and only just reaching hind angles of prothorax. Two impunctate dorsal striae, 1 entire and very deep, 2 deep and strongly arcuate, extending well beyond dorsal pores, 8 deep throughout, striole short and nearly straight, much nearer margin than suture, the pore a little nearer front than apex, interval 2 at middle nearly twice as wide as 1; dorsal pores large and close together, on site of stria 3 at a fifth and middle respectively. No evident microsculpture. Prosternum slightly sulcate, metasternum with a deep arcuate groove rather near front border, last ventral segment ♀ with the four pores in a line.

Length, 3.5 mm.

Distribution Ceylon (*J. Niebler*)

Type in the Stettin Museum

The narrow prothorax, with its very gently rounded sides, and the peculiar form of the elytral striation distinguish this from any other eastern species known at present.

444. *Tachys pœclopterus*, Bates

Tachys pœclopterus Bates *, Trans Ent Soc. Lond. 1873, p 331.
id., Ann Mus Civ. Gen. xxxii, 1892, p 295, Andrewes, Revision, 1925, p 440, t 3, f 16; id., Ent. Month Mag 1926, p 67, id., Tijdschr Ent lxxv, 1929, p 307

Tachys deliciolus Bates *, Ann Soc Ent Fr 1889, p 274, id., Ann Mus Civ. Gen. xxxv, 1892, p 295.

Colour dark red, joints 1 and 2 of antennæ (rest fuscous), palpi, and legs ferruginous, elytra chestnut-red (darker), with four pale spots, the front ones large and vague, the hind ones transverse and on a darker background.

Head with short, clearly duplicated furrows, rather widely separated, mentum without pores; eyes not prominent, antennæ submoniliform, joints 2 and 3 equal. Prothorax convex, a third wider than long, equally contracted at extremities, sides narrowly bordered and gently rounded, barely sinuate close to hind angles, which are slightly obtuse and not very sharp, with a slight carina, median line obsolete, basal sulcus not very deep, indistinctly crenulate, interrupted, and with a pore at middle. Elytra convex, ovate, with smooth rounded border, extending inwards just beyond hind angles of prothorax, two rather shallow dorsal striae, not crenulate, 1 entire, 2 shortened at extremities, and, viewed either sideways or from in front, not extending forward beyond the

first dorsal pore, 3 to 7 wanting, 8 deep throughout, stroke on middle of elytron, slightly curved, the pore at middle, dorsal pores small, on stria 3, at a third and three-fifths No microsculpture. Prosternum slightly sulcate, metasternal process finely bordered, without transverse groove behind it

Length, 2 1-2 5 mm

Distribution MYSORE Bangalore BOMBAY South Kanara, Agsur (*B. M. Bhatia*) PUNJAB Lyallpur (*K. N. Trehan*) UNITED PROVINCES Kheri Forest, Sitapur, West Almora, Ranikhet, Haldwani, and Sarju Valley (all *H. G. Champion*), Dehra Dun BENGAL Calcutta (*F. H. Gravely*), Sardah and Sundarbans (*F. W. Champion*), Gopaldhara (*H. Stevens*) SIKKIM Tarkhola in the Tista Valley (*H. Stevens*) EASTERN DUARS (*H. Stevens*). ASSAM Garo Hills, Someswari River (*S. W. Kemp* and *B. Chopra*). BURMA Tharrawaddy (*G. Q. Corbett*), Tenasserim (*J. W. Helfer*); Bhamo, Teinzo, Prome, and Rangoon (all *L. Fea*) MALAY STATES SIAM JAVA. SUMATRA CELEBES SUMBAWA INDO-CHINA CHINA JAPAN.

Type in Mr René Oberthür's collection, that of *deliciolus* in the Paris Museum

The species is a common one in South-East Asia, but in India it seems to be confined to the Northern Provinces, though there is in the British Museum a solitary example labelled "Bangalore." In the type of *deliciolus* and in some other examples from Indo-China, Siam, Java, and Sumbawa stria 2 of the elytra extends a little in front of the first dorsal pore

445 *Tachys stenoderus*, sp. nov.

Colour black; palpi, antennæ, and legs flavous, each elytron with a small, pale, rounded spot near shoulder, and a second, barely visible, small reddish spot towards apex.

Head with duplicated furrows, the inner ones short, parallel, and fairly deep; mentum without pores, eyes moderately prominent, antennæ somewhat dilated at apex, joints 2 and 3 equal. *Prothorax* convex, cordate, two-fifths wider than long, base a little wider than apex, sides rounded in front, sinuate a little before base, the hind angles right, with a well developed carina, median line very faint, basal sulcus deep, not crenulate, interrupted, and with an elongate pore at middle, the inner ends of the two parts punctiform, so that in certain lights there seems to be three pores at middle. *Elytra* convex, ovate, three-fifths wider than prothorax, two-fifths longer than wide, border smooth, rounded at shoulder and extending inwards rather beyond hind angles of prothorax; two fairly deep dorsal striae, not crenulate, 1 reaching apex but not base,

2 stopping short of the first dorsal pore in front, but extending beyond the second one behind, though viewed at a certain angle both 1 and 2 can be traced further forward, 8 deep throughout, striole curved, ending on the middle of the elytron, the pore half-way along it, dorsal pores distinct, on the site of stria 3, at a third and three-fifths. Surface very smooth, without microsculpture Prosternum deeply sulcate; metasternal process with an arcuate groove behind it

Length, 2 8 mm.

Distribution MADRAS - Nilgiri Hills, Hillgrove, 4000 feet (G. D. Bhasin), 1 ex (♀)

Type in the British Museum

446 *Tachys nalandæ, Anār.*

Tachys nalandæ Andrewes, Revision, 1925, p 441.

Colour piceous, elytra vaguely red and opalescent, venter a lighter red, antennæ, palpi, and legs flavous

Head with short but deep, almost punctiform inner furrows, outer ones obsolete, the oblique sides of head in front reflexed, mentum without pores, eyes not prominent, antennæ short and slender, joints 2 and 3 equal. *Prothorax* transverse, more contracted in front than behind, moderately convex, base truncate, sides evenly rounded in front and practically straight behind to the angles, which would be obtuse but for a minute tooth which projects a little laterally on each side, median line obsolete, basal sulcus rather shallow, not crenulate, and not far removed from base, interrupted, and with a small pore at middle *Elytra* short-ovate, convex, very nearly a half wider than prothorax, border smooth, forming a very obtuse angle at shoulder, thence directed inwards and a little backwards to a point rather beyond hind angle of prothorax; two very vaguely crenulate dorsal striae, 1 reaching apex but not quite reaching base, 2 abbreviated at extremities, 8 entire, striole moderately long, curved, ending on middle of elytron, the pore half-way along it, dorsal pores small, on site of stria 3, at about a fourth and three-fifths. Microsculpture evident only on front of head, where there is some slight transverse reticulation. *Prosternum* sulcate, metasternum with a short slightly angular groove in front, ♂ protarsi with two slightly dilated joints, last ventral segment ♀ with the four pores in line, rather a wide space between the two inner ones

Length, 2 5-3 mm

Distribution CEYLON Nalanda (W. Horn); Urugalla (G. M. Henry)

Type in my collection

447. *Tachys malabaricus*, Andr

Tachys malabaricus Andrewes, Revision, 1925, p 443

Colour black, joint 1 of antennæ, with base of 2, and legs ferruginous, each elytron with two vague transverse reddish spots, the front larger than the hind one

Head with fairly deep, duplicated furrows, mentum without pores, eyes rather prominent, antennæ filiform, exceptionally long and thick, somewhat dilated towards apex, joints 2 and 3 equal Prothorax transverse, equally contracted at extremities, sides rounded in front, straight behind to the minute rectangular hind angles, carina rudimentary, basal sulcus fairly deep, indistinctly crenulate, vaguely interrupted, and with a small pore at middle just behind the sulcus (but unless viewed from in front the sulcus appears uninterrupted) Elytra ovate and moderately convex, border smooth, rounded at shoulder and extending inwards a little beyond hind angles of prothorax, two moderately deep impunctate dorsal striae, 1 entire, 2 extending rather beyond dorsal pores, a suggestion only of stria 3, 8 entire, striole of medium length, curved, on middle of elytron, the pore at its middle, dorsal pores distinct, on the inside of site of stria 3, at a fourth and three-fifths No microsculpture Prosternum depressed, metasternal process bordered, with a transverse groove behind it

Length, 2 75 mm

Distribution MADRAS Malabar, Cannanore (A K W. Downing)

Type in my collection

448 *Tachys pallidicornis*, Andr

Tachys pallidicornis Andrewes, Revision, 1925, p 443

Colour black, underside piceous red, antennæ, legs, and two small transverse spots on each elytron ferruginous

Head with short, fairly deep furrows, indistinctly duplicated, diverging slightly behind, mentum without pores, eyes moderately prominent, antennæ rather short and stout, joints 2 and 3 equal Prothorax subcordate, a little more than a third wider than long, base rather wider than apex, sides rounded in front, straight behind, but sharply sinuate close to hind angles, which form on each side a rectangular tooth, with a clearly marked carina, median line fine, basal sulcus fairly deep, smooth, interrupted, and with an elongate pore at middle Elytra moderately convex, ovate, border smooth, subangulate at shoulder, and extending inwards well beyond hind angles of prothorax, two moderately deep crenulate dorsal striae, 1 reaching apex but stopping at about a sixth from base, 2 shortened at both ends but reaching beyond the dorsal pores, 8 deep throughout, striole rather

short but deep, on middle of elytron, the pore half-way along it dorsal pores distinct, on site of stria 3, at a third and three-fifths No microsculpture Prosternum deeply sulcate, metasternal process depressed at extremity, a deep arcuate groove behind it. protarsi ♂ with two barely dilated joints

Length 27 mm

Distribution BOMBAY Khandesh (*T R D Bell*)

Type in my collection This is the only example seen

449 *Tachys tagax*, Andr.

Tachys tagax Andrewes, Revision, 1925, p 444; id., Ent Month Mag 1926, p 67

Colour black, sometimes faintly æneous, apex of elytra reddish underside piceous, antennæ, palpi, and legs flavous

Head with short, parallel, more or less duplicated furrows, mentum without pores, eyes hardly prominent. apical half of antennæ submoniliform, joints 2 and 3 equal. *Prothorax* convex, a half wider than long base wider than apex, sides rounded in front and sinuate at a little distance from base, marginal channel fairly wide, hind angles right, with a distinct carina basal sulcus deep, a little uneven at bottom, but not crenulate, interrupted, and with an elongate pore at middle. *Elytra* with the border smooth angulate at shoulder, and extending inwards and backwards beyond hind angles of prothorax, two very indistinctly crenulate striae, 1 reaching apex but not base, 2 extending a little beyond the dorsal pores, 8 deep throughout, striae short but deep, on middle of elytron, the pore half-way along it dorsal pores small on site of stria 3, at about a fourth and a half. No microsculpture Prosternum sulcate metasternum with an arcuate groove in front

Length, 2.25-2.75 mm

Distribution UNITED PROVINCES West Almora, Naini-Tal Ranikhet, Haldwani (Nandbaur River), Sarju Valley, and Upper Gumti Valley (all *H G Champion*), Dehra Dun (Kaligad), Mussooree (Mossy Falls and Keniti Falls), Siwalik Hills, Arni Gad, Tehri-Garhwal (Aglai River) (all *M Cameron*), Chaubattia (*S R Archer*) SIKKIM Tista Valley, Tarkhola and Rangit River (all *H Stevens*)

Type (Tarkhola) in my collection

450 *Tachys stevensi*, Andr.

Tachys stevensi Andrewes, Revision, 1925, p 445.

Colour black, without æneous tinge or iridescence, palpi, antennæ (slightly darker towards apex), and two fairly large spots on each elytron ferruginous, venter red

Head rather narrow, frontal furrows short and straight, hardly duplicated, mentum without pores, eyes prominent, antennæ filiform, joint 2 hardly shorter than 3. *Prothorax* convex, transverse, base wider than apex, sides rather strongly rounded, sinuate at a little distance from base, hind angles right, with a short carina, basal sulcus deep, not crenulate, rather widely interrupted, and with a pore at middle. *Elytra* convex, ovate, with a smooth rounded border, extending inwards well beyond hind angles of prothorax, two fairly deep, vaguely crenulate, dorsal striae, 1 reaching apex but terminating a little before base, 2 ending abruptly just before the front dorsal pore but extending backwards beyond the hind one, 8 deep throughout, striole fairly deep, on middle of elytron, the pore half-way along it, dorsal pores rather small but distinct, at a third and just behind middle, on the site of stria 3. No microsculpture. *Prosternum* deeply sulcate; metasternum with an arcuate groove in front, protarsi ♂ with two hardly dilated joints.

Length, 2·75–3·25 mm.

Distribution TEHRI STATE Aglar River (*M. Cameron*) PUNJAB Simla Hills, Barogh (*N. Annandale*), Kangra (*G. Babault*) UNITED PROVINCES West Almora, Naini-Tal, Swali River basin, Haldwani, and Kaula (*H. G. Champion*), Bhim Tal (*N. Annandale*); Dehra Dun, Thano River (*C. F. C. Beeson*), New Forest (*J. C. M. Gardner*), Lachiwala (*H. G. Champion*) BIHAR Barwa (*Cardon*). ORISSA Singbhumi (*C. F. C. Beeson*) BENGAL Gopaldhara (*H. Stevens*) EASTERN DUARS (*H. Stevens*)

Type in my collection

In two examples taken by Mr L. Fea in the Karen Hills, and now in the British Museum, the elytral spots are rather vague, and the second stria is rather longer at both ends.

451 *Tachys vafer*, sp. nov.

Colour black above, brown beneath, palpi, joints 1 to 4 of antennæ, and legs flavous, rest of antennæ ferruginous, each elytron with two small, round, red spots, the front one just behind shoulder, the hind one near apex.

Head with fairly deep, duplicated furrows, reaching mid-eye level, mentum without pores, eyes only moderately prominent, antennæ slightly dilated at apex, joint 2 barely shorter than 3. *Prothorax* convex, cordate, two-fifths wider than head and as much wider than long, base a little wider than apex, sides strongly rounded, sinuate near base, hind angles right and sharp, with a short but distinct carina, median line very faint, basal sulcus deep, not crenulate, interrupted, and with a large pore at middle. *Elytra* convex, ovate,

border smooth, hardly angulate at shoulder, extending inwards somewhat beyond hind angles of prothorax, two rather indistinctly crenulate dorsal striae, 1 reaching apex but in front only reaching a point halfway between front dorsal pore and base, 2 extending back well beyond the second dorsal pore, but barely reaching the level of the first dorsal pore in front, though when viewed sideways extending a little beyond it, 8 deep throughout, striole not very long, on middle of elytron, the pore half-way along it, dorsal pores small but conspicuous, on site of stria 3, at about a third and three-fifths respectively. No microsculpture. Prosternum sulcate, metasternum with a deep arcuate groove in front.

Length 3 2 mm

Distr.ution CENTRAL PROVINCES. Mandla, Ramgar, Kanha (B. M. Bhatia)

Type in the British Museum; co-types in the Forest Research Institute, Dehra Dun, and in my collection

452 *Tachys nilgiricus*, Andr.

Tachys nilgiricus Andrewes, Revision, 1925, p 446

Colour black, sometimes faintly æneous, but without iridescence; antennæ and palpi flavous, elytra each with two rather small ferruginous spots

Head rather narrow, with more or less duplicated furrows, the inner ones short and straight, mentum without pores, eyes moderately prominent, antennæ filiform, joints 2 and 3 equal. *Prothorax* convex, cordate, base a little wider than apex, sides rounded in front and sinuate behind at a little distance from base, hind angles slightly acute, with a small carina, basal sulcus deep but not crenulate, interrupted at middle, the median pore exceptionally large. *Elytra* convex, ovate, border smooth, slightly angulate at shoulder, extending inwards a little beyond hind angles of prothorax; two dorsal striae, not crenulate, rather shallow, straight, and close together, 1 reaching apex but not base, 2 extending beyond the dorsal pores but only faintly impressed before the front one, 8 deep throughout, striole fairly long, on middle of elytron, the pore at its middle, dorsal pores at a third and two-thirds on site of stria 3. No microsculpture. Prosternum sulcate, metasternum with an arcuate groove in front.

Length, 3-3 5 mm.

Distr.ution MADRAS: Nilgiri Hills, Bhavani Valley and Kallar (H. L. Andrewes). MYSORE: Teppukadu (H. L. Andrewes)

Type in my collection.

452 a *Tachys nilgiricus* var *unisculptus*, Andr

Tachys nilgiricus Andrewes var *unisculptus* Andrewes,
Revision, 1925, p 446

Similar to the type-form excepting that stria 2 is obsolete

Distribution MADRAS Nilgiri Hills (H L Andrewes)
CEYLON Kanthalay and Trincomali (W Horn)

Type in my collection The examples from Ceylon are in the Deutsches Entomologisches Museum, Berlin, and in the Brussels Museum respectively

453 *Tachys nannodes*, Andr

Tachys nannodes Andrewes, Revision, 1925, p 447

Colour black, both faintly æneous and iridescent, antennæ and palpi flavous, each elytron with two small, vague, reddish spots, the whole apical area often vaguely red

Head with short duplicated furrows, inner ones diverging slightly behind, outer ones generally indistinct, mentum without pores eyes moderately prominent, antennæ short but filiform, joint 2 hardly shorter than 3. Prothorax convex, a half wider than long, base wider than apex, sides rounded in front and sinuate at a little distance from base, hind angles right, with a distinct carina, basal sulcus deep, indistinctly crenulate interrupted, the two parts ending inwardly in a slight punctiform depression on each side of an elongate central pore. Elytra short and convex, border smooth, forming a very wide angle at shoulder, two faintly crenulate dorsal striae, 1 reaching apex but barely longer than 2 in front, both when viewed from above appearing to terminate just in front of the first pore, though viewed sideways they can be traced nearer to base, 2 extending beyond the second pore 3 when viewed sideways visible, though scarcely impressed almost to base, 8 deep throughout, striole on middle of elytron the pore half-way along it. Dorsal pores on stria 3 at a third and just behind middle. No microsculpture. Prosternum sulcate, metasternum with an arcuate groove in front, protarsi ♂ with two slightly dilated joints.

Length 2 5-2 75 mm

Distribution UNITED PROVINCES Mussooree, Arni Gad (M Camcon) BOMBAY Belgaum (H E Andrewes) MADRAS Nilgiri Hills (H L Andrewes)

Type in my collection

454 *Tachys vagabundus*, sp nov

Colour piceous palpi, antennæ, and legs pale ferruginous femora a little darker, elytra each with a small apical reddish spot, occasionally wanting

Head with short, parallel, duplicated furrows : mentum without pores eyes not very prominent , antennæ filiform, joints 2 and 3 equal *Prothorax* convex, cordate, a half wider than head and as much wider than long. base much wider than apex, sides well rounded in front and gently sinuate before base, with a fairly wide marginal channel, hind angles right, sharp, and with a short but distinct carina : median line fine in front, deeper behind, where it forms more or less of a pore, separating the two parts of the basal sulcus, which is fairly deep, not crenulate, basal foveæ deep, adjoining the angles *Elytra* convex, oval, the border smooth, forming an indistinct angle at shoulder and extending inwards and a little backwards beyond the hind angles of the prothorax ; two fairly deep indistinctly crenulate striæ, 1 reaching apex, but when viewed from above terminating before base, though viewed sideways it can be traced to base. 2 extending beyond the dorsal pores in both directions, 3 just visible between the dorsal pores, 8 deep throughout, striole short but deep, nearly straight, on middle of elytron, the pore half-way along it ; dorsal pores small, on the site of stria 3, at about a third and three-fifths. No microsculpture. Prosternum sulcate ; metasternum with an arcuate groove in front.

Length, 2 6 mm.

Distribution TEHRI STATE. Aglar River (*M. Cameron*). UNITED PROVINCES. Haldwani (*H. G. Champion*) ; Dehra Dun, Kaligad, and Mussooree, Mossy Falls (*M. Cameron*) ASSAM Cachar, Haflong (*C. F. C. Beeson*).

Type (Aglar River) in the British Museum : ex-types in the Forest Research Institute, Dehra Dun. in Mr. Champion's collection, and in my collection

455. *Tachys salemus*, Andr

Tachys salemus Andrewes, Entomological Investigations on the Spike Disease of Sandal, (8) Carabidae Ind. For Rec. xviii. pt. v, 1933, pp 3 and 6, t. 1. f 6.

Colour black , joints 1 to 4 of the antennæ, palpi, legs. and two fairly large spots on each elytron ferruginous to flavous ; joints 5 to 11 of the antennæ fuscous

Head with duplicated frontal furrows, the inner pair shorter than the outer, mentum without pores ; eyes prominent ; antennæ stout but not moniliform, joints 2 and 3 of equal length. *Prothorax* convex, a half wider than long, base a little wider than apex, sides rounded in front and sinuate at a little distance from base, hind angles right, with a distinct carina ; basal sulcus deep, rather indistinctly crenulate, interrupted on each side of the central pore with which the fine median line terminates *Elytra* short and convex, border

forming a scarcely perceptible angle at shoulder, two faintly crenulate dorsal striae, 1 reaching apex and a little longer than 2 in front, where both terminate not far in front of the first pore, 2 extending a little way behind the second pore, 3, when viewed sideways, just visible between the two pores, 8 deep throughout, striole on the middle of the elytron, the pore within it.

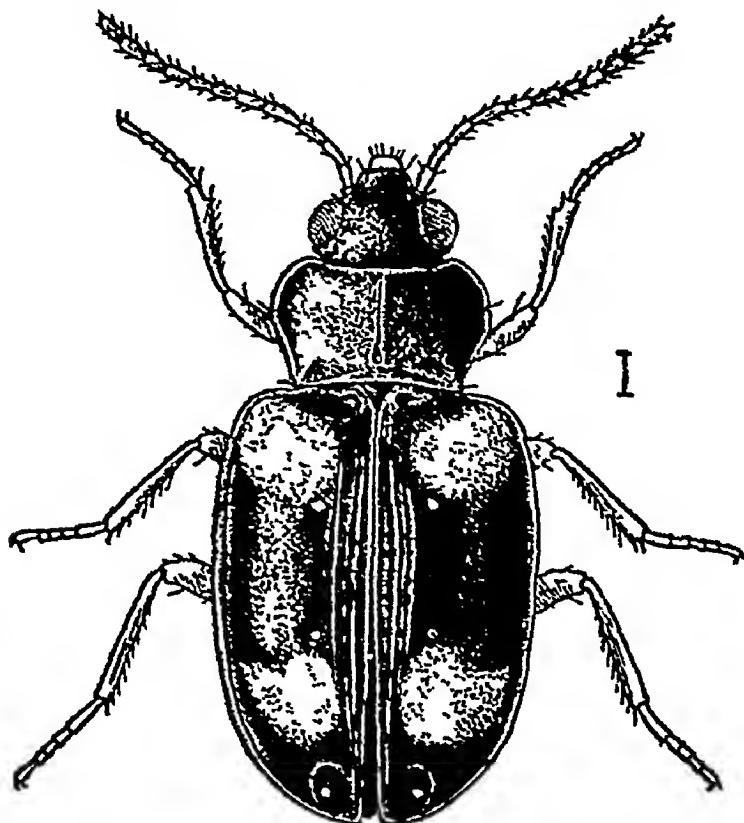


Fig. 44.—*Tachys salemus* Andrews

and half-way along it, dorsal pores on stria 3 at a third and three-fifths No microsculpture Prosternum sulcate metasternal process sharp, with an arcuate groove behind it

Length, 3-3 2 mm

Distribution MADRAS. North Salem, Jawalagiri

Type in the British Museum, co-type in the Forest Research Institute, Dehra Dun Both examples are ♀

456. *Tachys politus*, Motch

Tachys politus Motchulsky, Bull Mosc 1851, II, p 509, id, Études Ent xi, 1862, p 55, Putzeys, Ann Mus Civ Gen. vii, 1875, p 743, Bouchard, Ann Soc Ent Fr. 1903, p 170; Andrewes, Trans Ent Soc Lond 1919, p 199; id. Trans. Ent. Soc. Lond 1921, p 146, id, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya,

1914, par Guy Babault, Carab 1924, p 19, id, Revision 1925, p 448, t 3, f 8 and t 4, ff 23, 29, 32, 36, 37, and 40, id. Trans Ent Soc Lond 1928, p 5, id, Tijdschr Ent Ixvii 1929, p 307, id, Ind For Rec xviii, pt v, 1933, p 2
Bembidium crenatum Nietner, Ann Mag Nat Hist (3) ii, 1858, p 424

Tachys bioculatus Putzeys, Ann Mus Civ Gen viii 1875, p 743.
 Bates, Ann Mag Nat Hist (5) xii, 1886, p 153, id, Ann Mus Civ Gen xxvii, 1889, p 105; id, Compt rend Soc Ent Belg 1891, p 326, id, Ann Mus Civ Gen xxvii 1892 p 293

Colour dark rufous and slightly iridescent above, piceous beneath, venter dark red, elytra each with an ill-defined

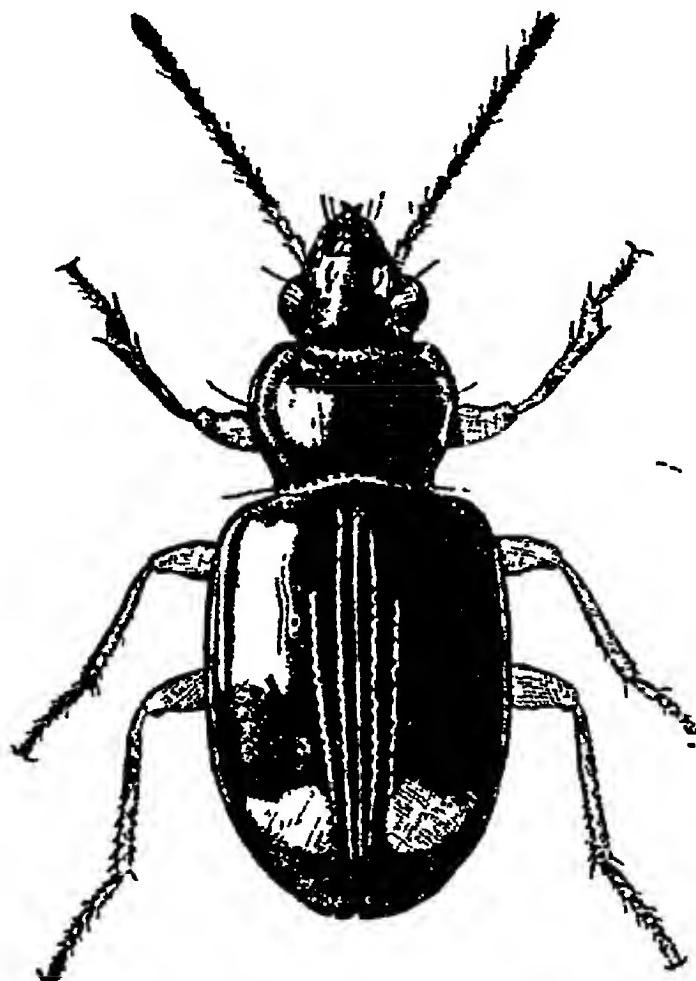


Fig. 45.—*Tachys politus* Motschulsky

spot near apex, and apical border reddish, joints 1 and 2 of antennæ, with base of 3 and 4, greater part of palpi, and legs flavous, rest of antennæ, and penultimate joint of palpi fuscous

Head with feebly duplicated furrows, inner ones short and parallel, *mentum* without pores, eyes moderately prominent, antennæ fairly long, slightly dilated towards apex, joint 2 a little shorter than 3. *Prothorax* convex, twice as wide as long, base hardly wider than apex, sides strongly rounded, sinuate quite close to base, hind angles right and sharp with a short distinct carina, median line fine, basal sulcus deep crenulate, interrupted, and with a large pore at middle, the foveæ deep. *Elytra* ovate, moderately convex, border smooth, extending inwards a little beyond hind angles of prothorax and forming a very obtuse angle at shoulder two dorsal striae, slightly crenulate and arcuate (convex outwards), 1 reaching apex but stopping a little short of base, 2 extending rather beyond dorsal pores, 3 sometimes just visible, 8 deep throughout, striole not very long, curved, on middle of elytron, the pore half-way along it, dorsal pores conspicuous, on site of stria 3, at basal third, and a little behind middle. A microsculpture of fine transverse lines is usually just visible on the prothorax and elytra, on the head there is a reticulation of nearly isodiametric meshes, the lines of which are very faintly impressed. Prosternum sulcate, metasternal process with an arcuate groove behind it; protarsi ♂ with two slightly dilated joints.

Length, 3–3.5 mm.

Distribution SOUTH-EAST ASIA Abundant nearly everywhere, but not extending to Japan or Australia.

Type in the Moscow University Zoological Museum; that of *ebeninus* in the Berlin Zoological Museum that of *biloculatus*, formerly in the Brussels Museum, cannot now be found there.

In typical specimens from Burma the prothorax is very wide and strongly contracted behind, the elytral striae fairly deep, curved, and somewhat widely separated. In some Indian examples the prothorax is narrower and only moderately contracted behind, while the elytral striae are shallower, a little straighter, and nearer together. There are, however, so many intermediate forms that all are here treated as belonging to one species -

456 a *Tachys politus* var *homostictus*, Bates

Tachys bioculatus Putz var *homostictus* Bates, Ann Mus Civ

Gen XXXII, 1892, p 293

Tachys politus Motch var *homostictus* Andrewes, Revision, 1925, p 449

This differs only from the type-form in the presence of a spot on the shoulder in addition to that at apex.

Type in the Genoa Civic Museum

456b *Tachys politus* var *aspilotus*, Andr

Tachys politus Motsch var *aspilotus* Andrewes, Revision, 1925, p 449

In this form the spot has disappeared altogether, leaving only the apical border reddish

Type in my collection

457 *Tachys charactus*, Andr

Tachys charactus Andrewes, Revision, 1925, p 451

Colour black, shiny, elytra each with two ferruginous spots, the base and apex sometimes reddish joints 1 and 2 of antennae (rest fuscous), and legs flavous

Head with indistinctly duplicated furrows, inner ones fairly deep, short and parallel mentum without pores, eyes not prominent antennae short, rather dilated at apex, joints 2 and 3 equal Prothorax convex, just over a third wider than long, equally contracted at extremities, sides narrowly bordered, strongly and evenly rounded, and sinuate just before base, the hind angle on each side formed by a small, sharp, nearly rectangular tooth, with only a slight carina, median line obsolete, basal sulcus deep, finely crenulate, widely interrupted, and with a pore at middle Elytra convex, the border smooth and rounded, just reaching hind angles of prothorax two deep, crenulate, dorsal striae, 1 reaching apex but not quite reaching base, 2 slightly arcuate, extending well beyond dorsal pores, 8 deep throughout, striae short and nearly straight, rather nearer margin than suture, the pore a little in front of middle, dorsal pores at a third and just behind middle, on site of stria 3 No microsculpture Prosternum sulcate, metasternal process with a deep arcuate groove

Length, 2 9 mm

Distribution UNITED PROVINCES West Almora, Tanakpur, Haldwani, Swal River basin (all H G Champion) BURMA Prome (G Q Corbett)

Type in the British Museum

458 *Tachys babaulti*, Andr [Plate IV, fig 7]

Tachys babaulti Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 87, t 2, f 1, id, Revision, 1925, p 452

Colour bronze-black, iridescent, joints 1 to 3 of antennae (rest brown), and legs ferruginous

Head with the frontal furrows short and not very deep, hardly duplicated, mentum without pores, eyes moderately

prominent ; antennæ filiform, joints 2 and 3 equal *Prothorax* convex, a little more than a third wider than long, base a trifle wider than apex, sides evenly rounded, sinuate just in front of hind angles, which are sharp and rectangular, with a short carina median line fine but visible, basal sulcus fairly deep, finely crenulate, interrupted, and with a rather shallow pore at middle *Elytra* moderately convex, border smooth, extending inwards rather beyond hind angles of prothorax, two dorsal striæ, finely crenulate and disappearing very gradually in front 1 reaching apex but not quite reaching base, 2 extending well beyond dorsal pores and nearly as long as 1 in front, 3 and even 4 visible but hardly impressed, 8 deep throughout, striole on middle of elytron, the pore half-way along it, dorsal pores distinct, on stria 3, at a third and three-fifths The fine transverse lines of the microsculpture are just visible on prothorax and elytra, more visible on the back of the head, while on the front there is a distinct, if fine, isodiametric reticulation Metasternal process with a rather shallow arcuate groove

Length, 2 5 mm

Distribution PUNJAB Lyallpur (*K N Trehan*) UNITED PROVINCES Dehra Dun, New Forest, and Asan River (*J. C M Gardner*), Dobhalwala, Haldwani (*H G Champion*) CENTRAL PROVINCES Nagpur (*E A D'Abreu*), Motinala (*G Babault*), Hoshangabad, Rahatgaon (*S. N Chatterjee*) INDORE Mhow, Khurda BOMBAY Poona (*G. E Bryant*); Matheran and Lonauli (*L Biró*) MADRAS Madras (*F H Gravely*); Nilambur, Nedungyam (*S N Chatterjee*)

Type in my collection

459 *Tachys championi*, Andr

Tachys championi Andrewes, Revision, 1925, p 453

Colour black, iridescent, without any æneous tinge, joints 1 to 4 of antennæ (rest brown), palpi, legs, and two fairly large spots on each elytron ferruginous, underside piceous red

Head with the inner furrows short and straight, the outer ones obsolete, mentum without pores, eyes moderately prominent, antennæ short, joints 2 and 3 equal *Prothorax* moderately convex, transverse, base a little wider than apex, sides rather gently rounded, sinuate not far from base, hind angles right, with a small carina; basal sulcus not very deep, distinctly though finely crenulate, interrupted and with a pore at middle *Elytra* moderately convex, with a smooth border, rounded at shoulder; two finely crenulate dorsal striæ, not deeply impressed or ending abruptly, 1 reaching apex but not base, 2 extending beyond dorsal pores, 3 just visible on middle of disk, 8 deep throughout, striole slightly

curved, on middle of elytron, the pore half-way along it; dorsal pores small but distinct, at a third and two-thirds, on stria 3 Microsculpture hardly appreciable on the prothorax and elytra, visible but faint on the head, the meshes isodiametric Prosternum sulcate; metasternum with an arcuate groove in front; protarsi ♂ with two very slightly dilated joints

Length, 2 75-3 25 mm

Distribution UNITED PROVINCES West Almora, Ranikhet, and Haldwani (*H. G. Champion*); Kathgodam (*S. W. Kemp*); Siwalik Hills (*M. Cameron* and *H. G. Champion*); Dehra Dun and Asan River (*J. C. M. Gardner*), Hathibarkala, Mothrawala, and Dhobalwala BENGAL. Gopaldhara (*H. Stevens*), Nurbong (*W. K. Webb*), Ghum (*M. Cameron*) EASTERN DUARS (*H. Stevens*)

Type in my collection

460 *Tachys charis*, Andr.

Tachys ornatus Putzeys (not Nietner, not Apetz), Ann Mus Civ Gen VII, 1875, p. 741

Tachys scydmaenoides Bates (not Nietner), Ann Mag Nat Hist (5) XVII, 1856, p. 154, id., Compt rend Soc Ent Belg 1891, p. 326

Tachys nietneri Bates (not Schaum), Ann Mus Civ Gen. XXXI, 1891, p. 295

Tachys charis Andrewes, Revision, 1925, p. 454

Colour black or very dark red, antennæ, palpi, legs, and two spots on each elytron pale ferruginous

Head with rather short, slight, duplicated furrows, mentum without pores; eyes not prominent, antennæ almost moniliform, joints 2 and 3 equal. *Prothorax* convex, not quite a half wider than long, base a shade narrower than apex, sides narrowly bordered, rounded, and rather sharply sinuate close to hind angles, which are sharp, right, and practically without carina, median line very fine, basal sulcus fairly deep, distinctly though finely crenulate, interrupted, and with a pore at middle. *Elytra* moderately convex, ovate, border smooth, rounded at shoulder, and extending inwards a little beyond hind angles of prothorax; two fine impunctate dorsal striae, 1 entire, 2 extending beyond dorsal pores, 3 to 7 wanting, 3 deep throughout, striae slightly curved, on middle of elytron, the pore half-way along it, dorsal pores small, on site of stria 3, at a third and three-fifths. No microsculpture. Prosternum sulcate, metasternal process rather narrowly bordered, with a straight, rather shallow, transverse groove behind it

Length, 2 2-2 7 mm

Dicranotus ORISSA. Kallikote (*N. Andamans*). CENTRAL PROVINCES. Nagpur, Ambajheri (*L. A. D. Bower*) BOMBAY Belgaum (*H. L. Andrews*); Matheran (*L. Rito*) MADRAS Ganjam Rambha (*N. Andamans*); Nilgiri Hills, Bhuvani Valley (*H. L. Andrews*) and Hillgrove (*G. D. Blower*); Vizagapatam Chipurupalli (*R. S. Patel*) MYSORE. Chikkaballapura (*T. J. Campbell*); Teppukadu (*H. L. Andrews*) CEYLON. Colombo (*G. Lewis*), Hambegamuwa, Kotte, and Mankulam (*G. M. Henry*) PERADENIYA. "Ceylon" (*J. Nutt.* 1811).

Type in my collection.

I have seen the various examples determined by Putzeys and Bates. The species appears to replace *parvopictus* in Central and Southern India.

One or two of the localities mentioned in my 'Revision' proved to be inaccurate and have been omitted here. In the specimen taken by Mr L. Fea at Mandalay, and referred to by Bates under the name of *nietneri*, the basal sulcus of the prothorax is hardly interrupted and there is only a small pore at middle; in its size, colour, and other characters it seems more nearly allied to *charis* than to *decoratus*.

460 a *Tachys charis* var *rubescens*, Andr.

Tachys charis Andreæ var *rubescens* Andreæ, Revision, 1825, p. 355.

Ceylon examples are usually slightly smaller (2.2 mm.) than Indian ones, chiefly red-brown in colour, with the sides of the prothorax less rounded in front and consequently less sinuate behind, so that the base is at least as wide as the apex. I have also seen a single example taken by Mr R. S. Patel at Vizagapatam.

Type in the British Museum.

461 *Tachys fuscitarsis*, Wall.

Bribidium fuscitarsis Walker, Ann. Mag. Nat. Hist. (3) n. 18, p. 203.

Tachys fuscitarsis Bates, Ann. Mag. Nat. Hist. (5) xvii, 1846, p. 211.
Andrewes Trans. Ent. Soc. Lond. 1919, p. 191, pl. 1, fig. 2.
1925, p. 455.

Colour black, joint 1 of antennæ, with basal half of 2, and legs ferruginous, elytra each with two large vague reddish spots, more or less joined along suture.

Head with fairly deep, duplicated furrows, inner one very uneven; mentum without pores; eyes moderately prominent; antennæ filiform, slightly dilated at apex, joints 2 and 3 equal. Prothorax convex, a third wider than long, about equally contracted at extremities, sides barely sinuate close to head.

angles, which project on each side as a rectangular tooth, with only a rudimentary carina, marginal channel fairly wide, basal sulcus moderately deep, crenulate, interrupted, and with a pore at middle (indistinct in type) *Elytra* moderately convex, ovate, border smooth, subangulate at shoulder, and extending inwards very little beyond hind angles of prothorax; two dorsal striae not crenulate, 1 entire, 2 shorter, but extending beyond dorsal pores, 3 to 7 wanting, 8 deep throughout, striole curved, on middle of elytron, the pore half-way along it, dorsal pores rather small, on the site of stria 3, at a third and three-fifths No microsculpture Prosternum more or less sulcate, metasternal process vaguely bordered, deeply depressed behind extremity, a slight straight transverse groove behind it

Length, 2 75 mm

Distribution CEYLON Anuradhapura (W. Horn), "Ceylon" (J. Nielsen)

Type in the British Museum

462. *Tachys striatifrons*, Andr

Tachys striatifrons Andrewes, Revision, 1925, pp 407 and 456

Colour black shiny, elytra dark red, with two paler spots on each, the front one somewhat oblique, antennae and legs ferruginous

Head with deep parallel inner furrows, reaching mid-eye level, bounded outwardly on each side by a rounded ridge, between which and the eye are two carinae, so that the head is in effect quadrisulcate on each side, mentum without pores eyes moderately prominent, antennae submoniliform, joints 2 and 3 equal *Prothorax* convex, not quite a half wider than long, sides rather strongly rounded and contracted behind sinuate quite close to base, which is only a little wider than apex, the angles slightly obtuse but not rounded with a slight oblique carina, marginal channel wide, basal sulcus deep, finely crenulate, interrupted, and with a pore at middle *Elytra* convex, ovate, border smooth, rounded at shoulder and extending inwards rather beyond hind angles of prothorax, two fairly deep smooth dorsal striae, 1 entire, 2 reaching well beyond dorsal pores, 3 to 7 wanting, 8 deep throughout, striole short, on middle of elytron, the pore half-way along it, dorsal pores on stria 3 at a fourth and three-fifths No microsculpture Prosternum deeply sulcate, metasternal process finely and narrowly bordered, with a deep straight transverse groove behind it

Length, 2 15 mm

Distribution BURMA Tenasserim (J. W. Helfer) SINGAPORE

Type in my collection

In size, form, and colour almost exactly reproducing *pæcilopterus*, but distinguished from it at once by the form of the frontal furrows

463 Tachys blandus, Andr. [Plate IV, fig 6]

Tachys hæmorrhoidalis Bates (not Dejean), Ann Soc Ent Belg 1892, p 230.

Tachys blandus Andrewes, in Mission dans les Provinces Centrales de l'Inde et dans la région occidentale de l'Himalaya, 1914, par Guy Babault, Carab 1924, p 85, t 1, f 8, id, Revision, 1925, p 459, id, Ind. For Rec xviii, pt v, 1933, p 2

Colour black above, brown beneath, the elytra faintly suffused with a deep reddish tinge, joints 1 to 3 of antennæ (rest fuscous), and legs ferruginous, the middle of femora sometimes infusate

Head with short, fairly deep, duplicated furrows, inner ones uneven, clypeal suture rather deep, mentum without pores, eyes moderately prominent, antennæ submoniliform, dilated at apex, joints 2 and 3 equal. *Prothorax* convex, a half wider than long, equally contracted at extremities, sides evenly rounded, not sinuate before base, the hind angles projecting on each side as a small rectangular tooth, carina rudimentary, basal sulcus moderately deep, finely crenulate, interrupted, and with a pore at middle. *Elytra* ovate, moderately convex, border smooth, rounded at shoulder and extending inwards well beyond hind angles of prothorax, two moderately deep dorsal striæ which are only microscopically crenulate, 1 entire, 2 extending beyond dorsal pores, 3 to 7 wanting, 8 deep throughout, striole rather deep, curved, on middle of elytron, the pore half-way along it, dorsal pores small, on or near the site of stria 3, at about a third and three-fifths. No microsculpture. *Prosternum* slightly sulcate, metasternal process rather narrowly bordered, a faint transverse groove behind it

Length, 2 5 mm

Distribution PUNJAB. Salt Range, Khewra Gorge UNITED PROVINCES Dehra Dun, Dobhalwala, and Hathibarkala, Ranikhet, Sarda River Gorge, Haldwani, and Jaunsar (all *H G Champion*), Mohand Rau (*M Cameron*), Siwalik Hills (*M Cameron* and *H G Champion*) BIHAR Ranchi (*W H Irvine*) REWA STATE Dhanpuri (*C F C Beeson*) CENTRAL PROVINCES Motinala (*G Babault*), Nagpur and Hoshangabad (*E A D'Abreu*) INDORE Mhow, Khurda BOMBAY. Khandesh (*T R D Bell*), Poona (*G E Bryant*) COORG Fraserpet MADRAS Vizagapatam, Chipurupalli (*R S Patuck*)

Type in my collection

464 *Tachys eueides, Bates*

Tachys eueides Bates, Ann Mag Nat. Hist. (5) xvii, 1836, p 153; Andrewes, Revision, 1925, p 460

Colour black, with a faint rœneous tinge, underside piceous; antennæ and legs pale ferruginous, each elytron with two small vague reddish spots

Head with short deep single furrows, mentum without pores; eyes moderately prominent, antennæ long and filiform, joints 2 and 3 equal. *Prothorax* convex, narrow, a fourth wider than long, equally contracted at extremities, sides strongly rounded and sinuate at a little distance from base. the hind angles very sharp, a little acute and projecting, with a distinct carina, marginal channel fairly wide, median line obsolete, basal sulcus deep, crenulate, interrupted, and with a large pore at middle. *Elytra* ovate, convex, with smooth rounded border, extending inwards a little beyond hind angles of prothorax, two deep impunctate dorsal striae, 1 reaching apex but not base, 2 extending beyond dorsal pores, 8 deep throughout, striole deep, slightly curved, on middle of elytron, the pore half-way along it, dorsal pores large, on site of stria 3, at a third and three-fifths. No microsculpture. *Prosternum* sulcate; metasternal process with a deep arcuate groove behind it.

Length, 3 2-3 4 mm

Distribution CEYLON Dikoya (G Lewis)

Type in the British Museum

465 *Tachys nigellus, sp nov.*

Colour black, palpi, antennæ, and legs flavous, but the femora and the penultimate joint of the palpi are more or less infuscate

Head with short, but fairly deep, duplicated furrows, diverging a little behind; mentum without pores; eyes not prominent, antennæ with joints 2 and 3 equal. *Prothorax* subquadrate, convex, two-fifths wider than long, base barely wider than apex, sides rounded in front, straight behind, the hind angles somewhat obtuse, the hind lateral pore on the angle and projecting as a slight tooth, a small carina present, median line faint, basal sulcus fairly deep, crenulate, practically uninterrupted, and without evident pore at middle. *Elytra* moderately convex, subovate, border smooth, rounding shoulder and extending inwards rather beyond hind angles of prothorax; two fairly deep, dorsal striae, hardly visibly crenulate, 1 entire, 2 extending at each end well beyond the dorsal pores, 3 just traceable on disk by microscopic pores, 8 deep throughout, striole not very long, curved, ending in front slightly nearer margin than suture, the pore half-way along it, dorsal pores

very small, on stria 3, at about a third and three-fifths respectively. No microsculpture. Prosternum slightly sulcate; metasternal process bordered and with a transverse groove behind it.

Length. 2.3 mm.

Distribution MADRAS: Nilambur (*G. D. Bhasin*); Nilgiri Hills (*H. L. Andrewes*).

Type in the British Museum

Hardly distinguishable from the Chinese *T. fusculus* Schaum except by the absence of microsculpture on the elytra.

466. *Tachys decoratus*, Andr.

Bembidium ornatum Nietner * (not Apetz). Ann Mag Nat Hist (3) II, 1858, p. 426

Tachys ornatus Bates, Ann. Mag. Nat. Hist. (5) xvii, 1886, p. 154

Tachys decoratus Andrewes, Revision, 1925, p. 424

Colour brown-red. antennæ and legs flavous, two fairly large transverse spots on each elytron whitish yellow.

Head with short, slight, parallel, duplicated furrows; labrum somewhat emarginate; no pores on mentum; eyes moderately prominent: antennæ submoniliform, joints 2 and 3 equal. *Prothorax* rather convex, a half wider than long, about equally contracted at extremities, sides evenly rounded, hind angles obtuse, furnished with a minute tooth but no carina, so that the marginal channel runs round and joins the basal sulcus - median line fine, basal sulcus rather shallow, especially at sides, vaguely crenulate, uninterrupted, and without pore at middle. *Elytra* short, ovate, though with well marked shoulders, border smooth, rounded at shoulder and extending inwards well beyond hind angles of prothorax; two impunctate rather shallow dorsal striae, 1 entire, 2 extending beyond dorsal pores, 8 entire, striole rather short, curved, on middle of elytron, the pore at about middle; dorsal pores small, of inner side of site of stria 3, at about a third and three-fifths. No microsculpture. Prosternum depressed, metasternal process bordered, with a straight transverse groove behind it.

Length. 2 mm.

Distribution CEYLON. Nalanda (*W. Horn*); Colombo (*L. Biró*); Kandy (*G. Lewis*).

Type in the Berlin University Zoological Museum.

467. *Tachys elutus*, sp. nov.

Colour pale ferruginous, the elytra vaguely paler at base, and each with a distinct transverse pale spot near apex.

Head with short, duplicated furrows, diverging a little behind; mentum without pores; eyes not prominent;

antennæ rather short joints 2 and 3 equal. *Prothorax* convex, subquadrate, two-fifths wider than long, base hardly wider than apex, sides rounded in front, straight behind, the hind angles obtuse but furnished each with a minute rectangular tooth and a rudimentary carina. median line extremely fine, basal sulcus moderately deep, crenulate, practically uninterrupted, though with a minute pore at middle. *Elytra* convex, ovate, a fourth wider than prothorax, two-fifths longer than wide border smooth, rounding shoulder and extending inwards a little beyond hind angles of prothorax, two vaguely crenulate and not very deep dorsal striae, 1 entire 2 extending each way a little beyond the dorsal pores, 3 and 4 just traceable. 8 entire striae short, slightly curved, ending on middle of elytron, the pore a little before middle, two very small dorsal pores on the site of stria 3 at about a third and three-fifths respectively. No microsculpture. Prosternum slightly sulcate, metasternal process with a curved groove, distant from the extremity and another shallower, straight, transverse one behind it.

Length, 1.85 mm.

Distribution BURMA Mintha Sakam in the Tavoy district (R. N. Parler). Tenasserim (J. W. Helser).

Type in the British Museum. The type and co-type are the only two examples seen the latter is in the Prague Museum.

468 *Tachys thibodes*, sp. nov.

Colour piceous, pulpi, antennæ, legs and apical third of elytra more or less ferruginous.

Head convex, with short, deep, straight furrows a short carina on each side between furrow and eye, but nearer the latter, mentum without pores, eyes small but moderately prominent, antennæ moniliform, joints 2 and 3 equal. *Prothorax* convex cordate, a half wider than head and as much wider than long, base wider than apex, sides well rounded in front, sinuate near base, hind angles right, with a well marked carina median line fairly deep, forming an elongate fovea at base, and separating the two parts of the basal sulcus, which is very deep and not crenulate. *Elytra* convex, oval, two-fifths wider than prothorax and as much longer than wide, border smooth, forming an obtuse angle at shoulder, exactly opposite the hind angle of the prothorax, and extending inwards and backwards to the site of stria 4; stria 1 deep, impunctate, striae 2, 3, and even 4 just traceable but not impressed, 8 deep throughout, striae rather short, slightly curved, ending on middle of elytron, the pore half-way along it; two large dorsal pores on stria 3 at about a fourth and

a half respectively, and a large umbilicate pore at the bottom of a small rounded fovea on each side of scutellum. No microsculpture. Prosternal process sulcate, metasternal process bordered, its extremity at a little distance from the furrow which forms the border, last ventral segment slightly setulose.

Length 2 4 mm

Distribution BENGAL. Ghum district (*M. Cameron*)

Type in the British Museum. This is at present unique.

469 *Tachys suturalis*, Motch

Tachys suturalis Motchulsky*, Bull Mosc 1851, II, p 508, Putzeys, Ann Mus Civ Gen VII, 1875, p 746, Andrewes, Trans Ent Soc Lond 1919, p 198, id, Revision, 1925, p 104, id, Trans. Ent Soc Lond 1928, p 4

Colour dark ferruginous; underside more or less piceous, joints 1 to 4 of antennæ, palpi, and legs lighter, elytra also a little lighter, but with the sutural area more or less widely infuscate.

Head with indistinctly duplicated, parallel furrows, inner ones widening inwardly behind into two foveæ, mentum without pores, eyes rather flat, antennæ with joints 2 and 3 equal. *Prothorax* convex, hardly more than a third wider than long, base a little wider than apex, sides gently rounded in front, sinuate at a little distance from base, marginal channel fairly wide, hind angles right, with a very rudimentary carina, median line obsolete but visible towards base, basal sulcus not very deep, a little uneven, but not crenulate, rather widely interrupted at middle, with only a slight narrow pore formed by the end of the median line. *Elytra* elongate-ovate, moderately convex, border smooth, turning the shoulder rather sharply, though hardly angulate, and extending rather beyond hind angles of prothorax, stria 1 entire, moderately impressed and very vaguely crenulate, 8 deep throughout, 2 just traceable the rest wanting, apical striole rather short and straight, ending on middle of elytron, the pore a little nearer front than apex, dorsal pores rather small, on site of stria 3 at a third and just behind middle. No visible microsculpture. *Prosternum* sulcate, *metasternum* also sulcate, without transverse groove, the process unbordered but depressed, *protarsi* ♂ with two slightly dilated joints.

Length, 2 5-3 mm

Distribution TENASSERIM (*J. W. Helper*)

Type in the Moscow University Museum.

Several reputed "co-types" of this species are to be found in various European museums, including the British Museum,

the Berlin University Zoological Museum, the Deutsches Entomologisches Museum, the Brussels Museum, and the Copenhagen Museum, while in the Prague Museum there is a very long series of specimens taken nearly a hundred years ago by J W Helfer. It is known that Motchulsky received a good deal of material from Prague, and it is extremely probable that all the known specimens came from Helfer's collection, the locality given, though probably correct, must be accepted with some reserve, for Helfer also collected in Bengal and Sikkim.

470 *Tachys unitarius*, Bates

Tachys unitarius Bates *, Ann Mus Civ Gen xxxii, 1892, p 296.
Andrewes, Revision, 1925, p 425.

Colour dark red, with two large pale spots on each elytron, antennæ, palpi, and legs ferruginous.

Head with very short, duplicated furrows, mentum without pores, eyes moderately prominent, antennæ submoniliform, joints 2 and 3 equal. Prothorax convex, a half wider than long, base a shade wider than apex, sides gently rounded, not sinuate behind, hind angles slightly obtuse, with a short carina, marginal channel rather wide; basal sulcus moderately deep, finely crenulate, uninterrupted, and without pore at middle. Elytra moderately convex, ovate, border smooth, rounded at shoulder and extending inwards very little beyond hind angle of prothorax, sutural stria only present, not crenulate, entire but shallow, 2 just visible, 3 to 7 wanting, 8 deep throughout, striole rather short and nearly straight, nearer margin than suture, the pore a little in front of middle, dorsal pores very small, on stria 3, at a third and rather behind middle. No microsculpture. Prosternum sulcate, metasternal process bordered and with a shallow groove behind it.

Length, 2 1-2 3 mm.

Distribution ASSAM Garo Hills, above Tura (S. W. Kemp). BURMA Palon in Pegu and Karen Hills (L Fea); Tavoy Maungmagan (R N Parker), Tenasserim (J W Helfer).

Type in the Genoa Civic Museum.

470 a *Tachys unitarius* var *scotodes*, var nov

The examples from the Karen Hills and Tavoy, as also a third example, labelled "Burma," in my collection, differ in colour from the type-form (Palon) described above, being black with two vague dark red spots on each elytron. The type of the variety is in my collection.

Key to the comptus-group

- | | |
|--|--|
| 1 (4) Dorsal pores on stria 3 only | |
| 2 (3) Two dorsal pores | <i>comptus</i> , Andr., p 282 |
| 3 (2) Three dorsal pores | <i>comptus</i> var. <i>borealis</i> ,
[Andr., p 283] |
| 4 (1) Dorsal pores numerous, on striae 3, 5, and 7 | <i>comptus</i> var. <i>pluripunctatus</i> , Andr., p 283 |

471 Tachys comptus, Andr.

Tachys comptus Andrewes, Ann Mag Nat Hist (9) x, 1922,
p 161, id., Revision, 1925, p 461, Alluaud, Afr., II, 1930,
p 15, f 8

Colour black, shiny; prothorax, and the base, border, and epipleura of elytra dark red, palpi, antennæ, two transverse spots on each elytron, and venter ferruginous

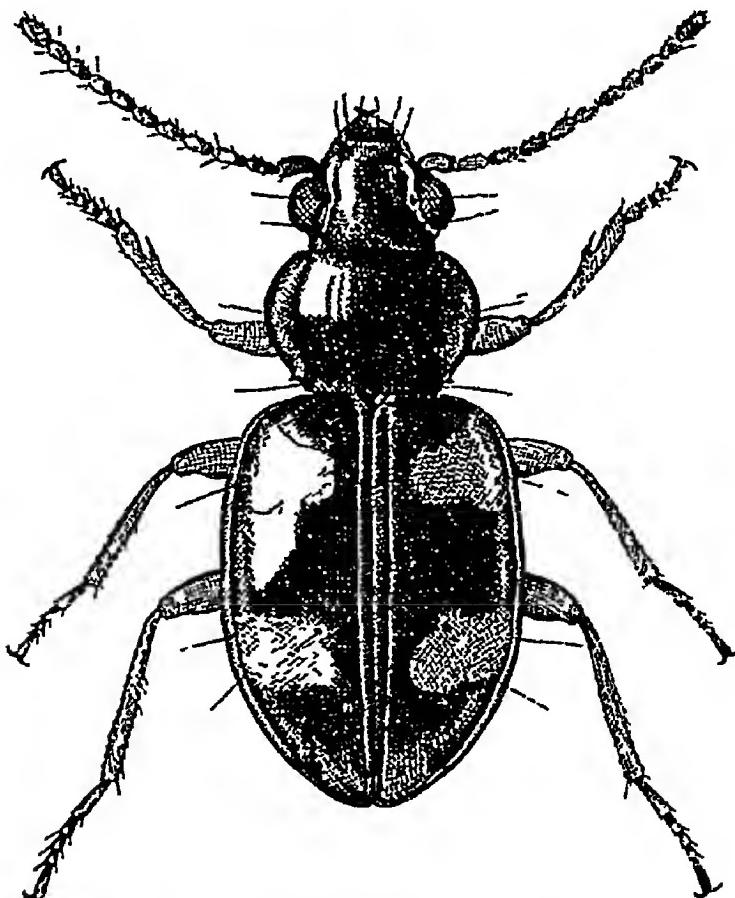


Fig. 46.—*Tachys comptus* Andrewes

Head small, with shallow, duplicated furrows, the inner ones rather faint, mentum without pores, eyes not prominent, antennæ submoniliform, joint 2 much shorter than 3. *Prothorax* convex, a third wider than long (not a half, as in the original description), base where in contact with the elytra

a little narrower than apex, sides strongly rounded, marginal channel widened at middle, hind angles projecting on each side as an acute tooth, at some distance from the elytra, with a well marked carina, sides of base very oblique and not in contact with the elytra, median line faint, basal sulcus finely crenulate, neither very deep nor distant from the margin, parallel throughout with the apparent base, hardly interrupted, and without any distinct pore at middle. Elytra convex, ovate, border smooth, rounded at shoulder, and disappearing long before reaching the apparent base, only one, rather shallow, impunctate dorsal stria, not nearly reaching base, 8 deep throughout, striole slightly curved on middle of elytron, the pore half-way along it, two dorsal pores on site of stria 3, close to base and at three-fifths. No microsculpture. Prosternum sulcate, metasternal process narrowly bordered, last ventral segment ♀ with the four pores in line, ♂ protarsi with two slightly dilated joints.

Length, 2.5 mm.

Distribution ASSAM, Tezpur (*S. W. Kemp*) BENGAL. Darjeeling BIHAR: Ranchi (*W. H. Irvine*) CENTRAL PROVINCES. Nagpur (*E. A. D'Abreu*) BOMBAY. Belgaum, Khanapur, and Parle (*H. E. Andrewes*) MADRAS. Madras (*F. H. Gravely*) CEYLON. Anuradhapura (*W. Horn*) SOMALILAND KENYA.

Type in my collection

471a *Tachys comptus* var *borealis*, Andr.

Tachys comptus Andrewes var *borealis* Andrewes, Revision, 1923, p. 462, id., Ent Month Mag 1926, p. 67.

The examples to which this name is applied differ from the type-form in having three pores on interval 3, the second placed not far behind the first.

Distribution BENGAL: Gopaldhara (*H. Stevens*) BIHAR. Barwa (*Cardon*) UNITED PROVINCES Dehra Dun (*M. Cameron* and *S. N. Chatterjee*), Jhajra (*J. C. M. Gardner*), Anarwala, Sarju Valley (*H. G. Champion*) MADRAS. Anaimalai Hills (*J. C. M. Gardner*) FORMOSA.

Type in my collection

The specimens from Jhajra were found by Mr Gardner in a nest of *Termes (Cyclotermes) obesus* Ramb.

471b *Tachys comptus* var *pluripunctus*, Andr.

Tachys comptus Andrewes var. *pluripunctus* Andrewes, Revision, 1923, p. 462, t. 3, f. 10.

This form is darker than the type, with very little red at the base of the elytra, the spots smaller, more transverse,

and more clearly defined. The chief character which distinguishes this variety is the presence of numerous dorsal pores which vary a little both in number and position, there are approximately four pores on the site of stria 3 (two close to base), one on 4 (near the front end of the striole), three on 5 (one close to base), and one on 7, all fairly conspicuous.

Distribution UNITED PROVINCES West Almora (H. G. Champion)

Type in the British Museum.

Key to the ovatus-group

- | | |
|--|--|
| 1 (2) Elytra with two dorsal pores only, two reddish spots on each elytron | <i>ovatus</i> , Motch., p 284 |
| 2 (1) Elytra with more than two dorsal pores | |
| 3 (4) Elytra with rows of few pores on intervals 3 and 5, colour black without spots | [Andr *, p 286
<i>ovatus</i> var <i>obliteratus</i> , |
| 4 (3) Elytra with rows of numerous pores on intervals 3 and 5, two reddish spots on each elytron | <i>elegans</i> , Andr , p 286 |

472 *Tachys ovatus*, Motch

- Lopha ovata* Motchulsky *, Bull Mosc 1851, n, p 509
Tachys albicornis Schaum *, Berl Ent Zeitschr 1860, p 199,
 Motchulsky, Études Ent xi, 1862, pp 27 and 55
Tachys mirabilis Bates *, Ann Mus Civ Gen xxxii, 1892, p 294,
 Dupuis, Ann Soc Ent Belg 1913, p 175, Andrewes, Trans
 Ent Soc Lond 1921, p 146
Tachys mirandus Dupuis *, Ann Soc Ent Belg 1913, p 170
Tachys ovatus Andrewes, Trans Ent Soc Lond 1919, p 198,
 id, Ann Mag Nat Hist (9) xiii, 1924, p 468, id, Revision,
 1925, p 463, t 3, f 9, id, Trans Ent Soc Lond 1928, p 5,
 Alluaud, Afra, n, 1930, p 14

Colour piceous black, two rather large vague spots on each elytron, one just below shoulder and the other at apical third, apex of elytra and venter reddish; palpi and legs ferruginous, antennæ with joints 1 and 2 ferruginous, 7 to 11 white, the four intervening joints usually fuscous, but 5 and 6 are often lighter.

Head with duplicated furrows, a slight ridge on each side separating the two parts, the inner ones wide and shallow but with an impressed line at bottom, outer ones narrow, a depression between front and vertex, mentum without pores, eyes rather prominent, antennæ with joints 2 and 3 approximately equal. Prothorax cordate, nearly as long as wide, the sides rather gently rounded, marginal channel wide at middle, narrowing at extremities, a tubercle bearing the hind seta projecting laterally in front of the inconspicuous

* The variety has not yet been met with in the Indian region

hind angles, median line obsolete, basal sulcus wanting, the foveæ deep, semicircular (convex inwards), bounded on each side by a carina. *Elytra* convex, ovate, border smooth, disappearing just behind shoulder, where there is an indentation, with a rounded tooth in front of it, the border continuing inwards to a point opposite the hind angles of the prothorax; striae 1 and 8 entire and impunctate, the remainder wanting,

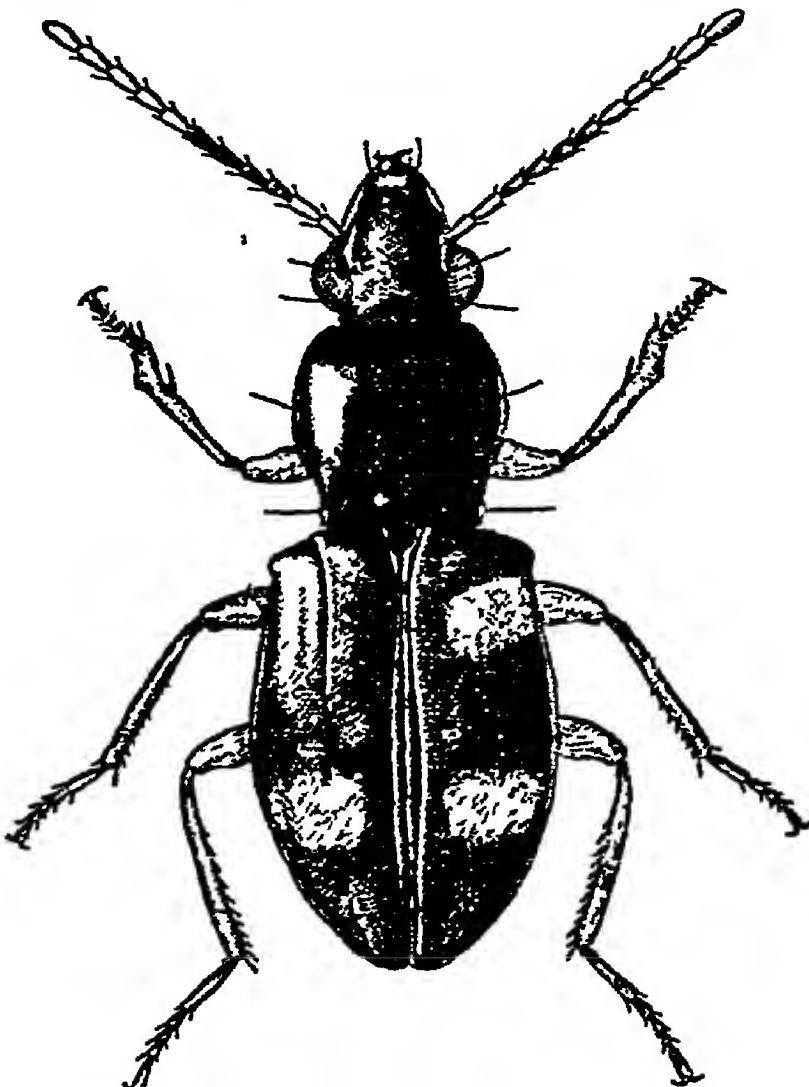


Fig. 47.—*Tachys oratus* Motchulsky

1 approaching suture near base and then curving outwards to the basal pore, an additional stria (the basal portion of 4 or 5), with its inner side slightly carinate, running from the base down the middle of the elytron, sometimes very short, but generally extending to a third or even a half, curving outwards at base and forming a small tooth at the point where the border terminates, apical striole short and slight, the pore a little before middle, two small dorsal

pores on the site of stria 3, one close to base, the other at about middle Surface smooth, without evident micro-sculpture Prosternum not sulcate, metasternal process narrowly bordered, protarsi ♂ with two slightly dilated joints

Length 2 5-2 8 mm

Distribution ASSAM Patkai Mountains and Assam Valley CEYLON Negombo (*W Horn*) BURMA Bhamo and Kaw-kareik (*L Fea*), Moulmein (*Fieber*), Tavoy, "Tenasserim" (*J W Helfer*) SUMATRA MALAY STATES CHINA FORMOSA PHILIPPINE Is CELEBES

Type in the Moscow University Zoological Museum, those of *albicornis* and *mirandus* in the Deutsches Entomologisches Museum, Berlin-Dahlem, that of *mirabilis* in the Genoa Civic Museum There is a co-type of *albicornis* in the Berlin Zoological Museum, and a co-type of *mirandus* in the Brussels Museum

472 a *Tachys ovatus* var *obliteratus*, Andr

Tachys ovatus Motchulsky var *obliteratus* Andrewes, Revision, 1925, p 465

If the example indicated as the type of *albicornis* in the Berlin Zoological Museum really came from Bowring, his label (no 763) has been removed, though one is attached to the second specimen from the Schaufuss collection The example in question is clearly not the type, for it does not agree with the description, the elytra are black, reddish only at apex, and instead of the two usual dorsal pores there is a row of about five near stria 3, and two in the neighbourhood of stria 5, the setæ being more or less abraded This is a smaller number than in *elegans*, and in other respects the example agrees with the typical form of *ovatus*, so that I have treated it as a variety of that species, and in my 'Revision' I gave it the name of var *obliteratus* A second rather larger example, also from the Schaum collection, is labelled "Celebes"

473 *Tachys elegans*, Andr

Tachys elegans Andrewes, Revision, 1925 p 465, Alluaud, Afra, II, 1930, p 14

The dimensions and colours are practically those of *ovatus*, to which the species is very nearly related Head with rather deeper inner furrows Prothorax a little narrower, with a wider marginal channel, the setiferous tubercle at the base jutting out much more prominently on each side in the form of a sharp rectangular tooth Elytra similar in shape the tooth at shoulder on each side more pointed and prominent, the striae similar but with the basal stria very short.

The character which chiefly distinguishes the species from *ovatus* is the presence on each elytron of two rows of long erect setæ, of which there are about five in the first row on the site of stria 3 and nearly twice as many in the second, which is placed apparently on the outer margin of interval 5. The surface and underside do not differ.

Length, 2.6 mm.

Distribution MADRAS - Nilgiri Hills (H. L. Andrewes)

Type in my collection

An example in the collection of the late T. G. Sloane is referred to in his paper on the Australian species of this genus (Proc Linn Soc NSW 1922, p 196)

fumigatus-group

474 *Tachys fumigatus*, Motch

Tachys Jumigatus Motchulsky *, Bull Mosc 1851, n. p. 509. Andrewes, Revision, 1925, p 466, t. 3, f. 17, and t. 4, f. 33, id. Trans Ent Soc Lond 1928, p 5, id., Tijdschr Ent IX, 1929, p 307, id., Resultats Scientifiques du voyage aux Indes Orientales Neerlandaises de LL AA RR le Prince et la Princesse Leopold de Belgique, Mém Mus Hist Nat Belg (Hors Série) IV, 4, Carab 1932, p 8, id., Ind. For. Rec XVIII, pt. V, 1933, p 3, Alluaud, Afra, 7, 1933, pp 3-5 and 71-20

Bembidium emarginatum Nietner *, Ann Mag Nat Hist (3) n. 1858, p 425

Bembidium scydmænoides Nietner *, Ann Mag Nat Hist (3), n. 1858, p 427

Tachys geminatus Schaum *, Berl Ent Zeitschr 1860, p 260; Putzeys, Ann Mus Civ Gen VII, 1875, p 740

Tachys socius Schaum *, Berl Ent Zeitschr 1863, p 92, de la Brûlerie, Ann Soc Ent Fr. 1875, p 438, note (82); Reitter, Wien Ent Zeit 1884, p 118, Netolitzky, Ent Blätt 1914, p 175, Sloane, Proc Linn Soc NSW 1921, p 203

Tachys emarginatus Putzeys, Ann Mus Civ Gen VII, 1875, p 739. Bates, Ann Mag Nat Hist (5) XXII, 1886, p 155, id., Ann Soc Ent Fr 1889, p 275, id., Ann Mus Civ Gen XXXII, 1892, p 295, Bouchard, Ann Soc Ent Fr 1903, p 170, Dupuis, Ann Soc Ent Belg 1913, p 426, Andrewes, Rec Ind Mus XXII, 1921, p 341

Tachys scydmænoides Bates, Trans Ent Soc Lond 1883, p 267 (part)

Tachys emarginatus Nietner var. *pallidus* Dupuis * (not Chaudoir, not Reitter), Ann Soc Ent Belg 1913, pp 175 and 427

Tachys emarginatus Nietner var. *putzeysi* Dupuis (not Fleutiaux and Sallé), Ann Soc Ent Belg 1913, p 427

Tachys fumigatus Motchulsky var. *singalensis* Csiki, Col Cat pars 97, Carab 1928, p 180

Colour varying from black to light chestnut, elytra each with a small apical and sometimes also a vaguer humeral spot, legs, joints 1 and 2 of antennæ, and palpi flavous, rest of antennæ and penultimate joint of palpi fuscous

Head with long and very deep furrows, converging and nearly meeting on front margin of clypeus, the surface convex

between them and striate on each side between furrow and eye, both labrum and clypeus deeply emarginate, mentum without pores. eyes rather prominent, antennæ submoniliform. *Prothorax* cordate, a half wider than long, sides rounded in front, contracted and slightly sinuate behind, the base hardly wider than the apex, the hind angles a little obtuse but sharp, without, or with only a very rudimentary, carina; median line fine, basal sulcus not very deep, joining marginal channel at sides, faintly crenulate, barely interrupted, and with only a very slight pore at middle. *Elytra* rather short and convex, the border smooth, extending inwards very little beyond hind angles of prothorax, two rather lightly impressed dorsal striae, minutely crenulate, 1 entire, 2 extending well beyond dorsal pores, 3 and 4 just traceable, 8 very deep, apical striole short and nearly straight, on middle of elytron, the pore half-way along it, dorsal pores small, at a third and three-fifths, placed on the third interval, though nearer stria 3 than stria 2 Microsculpture distinct, consisting of fine, rather irregular, transverse lines, forming very wide meshes on elytra and neck, front of head quite smooth, prothorax (at least on disk) with the meshes nearly isodiametric Prosternum sulcate, metasternal process unbordered, depressed, a straight, deep groove running across metasternum behind it, protarsi ♂ not dilated

Length, 1 8-2 mm.

Distribution SOUTHERN ASIA from Japan in the north to New Guinea in the south, and from the Philippine Is in the east as far as East Africa and Madagascar, so that the species has very nearly as wide a range as *fasciatus*

Type in the Moscow University Zoological Museum; those of *emarginatus*, *scydmænoides*, and *socius* in the Berlin Zoological Museum, that of *geminatus* in the Deutsches Entomologisches Museum

As might be expected, when the vast area of distribution is considered, the species is a very variable one, but the different forms are not very clearly defined, and have not here been treated as distinct varieties

In *scydmænoides* the elytra are more or less red-brown and the microsculpture of the prothorax is formed by transverse meshes, approaching that of *geminatus*. Examples of this form have been met with in Ceylon and Japan

In *geminatus* there is a shoulder as well as an apical spot, and this form is prevalent chiefly in the Malay region. The carina in the hind angles of the prothorax is slightly developed, so that the lateral channel and basal sulcus do not quite meet, and there is rather more evidence of a pore at the middle of the sulcus. The microsculpture is also distinctly finer, the meshes being strongly transverse even on the

prothorax; occasionally it becomes much fainter, or even obsolete. Dupuis's var. *putzeysi* is identical with *geminatus*, and his var. *pallidus* (=var. *singalensis* Csiki) refers to light chestnut examples of the type-form.

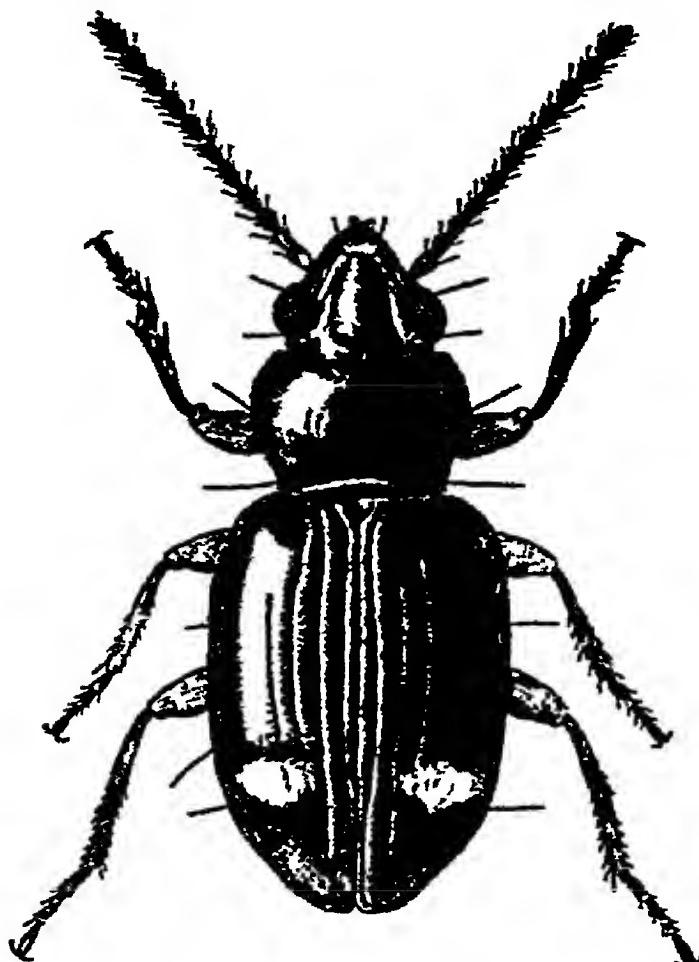


Fig. 48.—*Tachys furnigatus* Motchulsky

Schaum's *socius* was described from Upper Egypt, and was treated until recent years as a variety of *haemorrhoidalis* Dej., it agrees fairly well with *geminatus*, but stria 3 is present, though lightly impressed, and striae 4 and 5 are sometimes visible.

acaroides-group

475. *Tachys acaroides*, Motch

Tachys acaroides Motchulsky *, Études Ent. viii, 1859, p. 39; Putzeys, Ann. Mus. Civ. Gen. vn, 1875, p. 740, Andrewes, Revision, 1923, p. 469, id., Trans. Ent. Soc. Lond. 1928, p. 19.

Colour ferruginous, with palpi, joint 1 of antennæ, and legs paler

Head wide, not contracted behind eyes, which are rather flat, frontal furrows single and very short, though fairly deep and wide, mentum without pores, antennæ short and rather slender, submoniliform, joint 2 longer than 3. *Prothorax* convex, quadrate, a half wider than long, base a little narrower than apex, very distinctly produced backwards at middle, with its sides oblique, sides rounded, without trace of sinuation before base, border continued only a little way along base, slightly thickened round the hind angles, which are distinct, though obtuse and without carina; median line just visible,

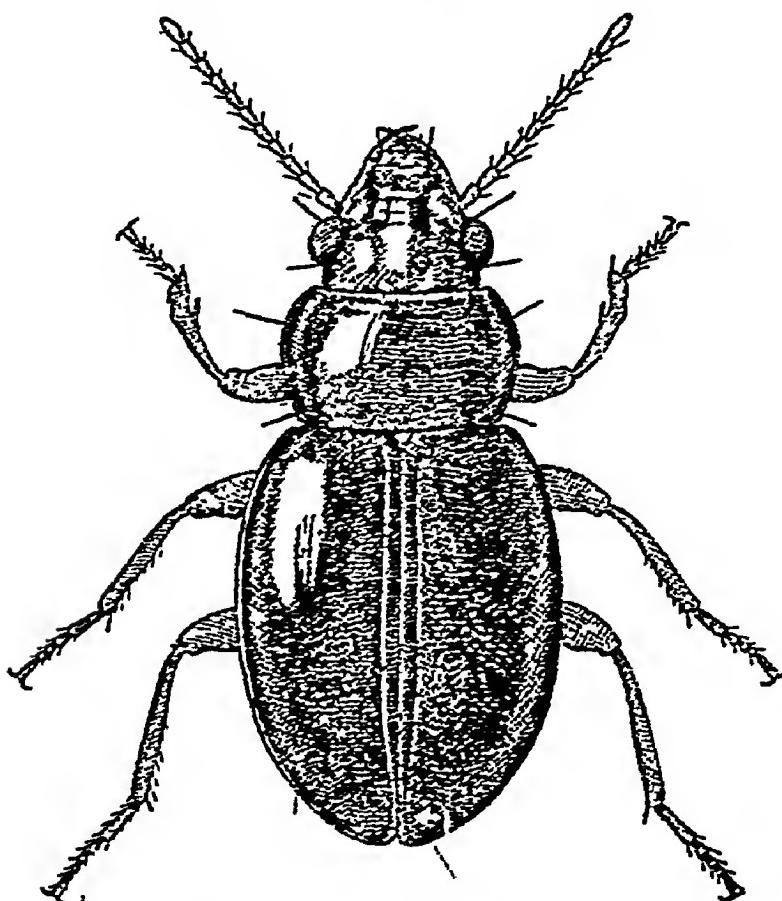


Fig. 49.—*Tachys acaroides* Motchulsky

basal sulcus shallow, near margin, not crenulate, uninterrupted, obsolete at sides, the base hardly depressed and without foveæ. *Elytra* convex, short-ovate, border setulose and minutely dentate, forming almost an angle at shoulder, but continuing straight inwards on each side to a point a little beyond the hind angle of the prothorax, one rather feebly impressed, smooth, dorsal stria, which does not quite reach either base or apex, stria 8 represented by large punctures, though faintly impressed on apical third, striole wanting, dorsal pores small and rather close together, on the site of

stria 3, at about a third and three-fifths Prosternum depressed in middle, metasternal process depressed but not clearly bordered, a straight transverse groove behind it, claws smooth

Length, 1.5 mm

Distribution Ceylon Colombo (J. Vietner)

Type in the Moscow University Zoological Museum

Among the very small members of the genus and superficially like one of the *haliploides*-group, from which it differs in many of its characters Bouchard records it from Sumatra (Ann Soc Ent Fr 1903 p 170), but this proves to have been a misidentification, and I have since described his species (Ann Mag Nat Hist (10) vi, 1930 p 364) under the name of *T curvatus*

Key to the haliploides-group

- 1 (4) Elytra with three impressed and crenulate dorsal striae
- 2 (3) Dorsal striae 2 and 3 moderately impressed colour pale ferruginous
Length 1.8 mm
amplians, Bates, p 292
- 3 (2) Dorsal striae 2 and 3 very lightly impressed, colour dark castaneous
Length 2.1 mm,
sp [p 292]
- 4 (1) Elytra with one dorsal stria only
5 (20) Upper surface shiny, without appreciable microsculpture
omphalus, sp nov,
- 6 (13) Upper surface ferruginous or castaneous elytra sometimes with an ocellate spot on each near apex
7 (8) Antennae pale throughout, elytra some times with a vague ocellate spot on each at apex prothorax two thirds wider than long, elytra barely a third longer than wide Length about 2.3 mm
haliploides, Bates, [p 293]
- 8 (7) Antennae with joints 3 to 11 fuscous, prothorax a half wider than long
- 9 (10) Elytra without spot at apex only darker along the margin and suture
Length 2.5 mm
buxans, Audi, p 296
- 10 (9) Elytra with a fairly distinct ocellate spot on each at apex Length not exceeding 3 mm
11 (12) Elytra about a fourth longer than wide
12 (11) Elytra quite a third longer than wide
13 (6) Upper surface with at least half its area brown or black; antennae pale
Length under 2 mm
14 (17) Head and prothorax brown or red, elytra mottled or spotted
15 (16) Head and prothorax brown, elytra mottled with brown, apex piceous
16 (15) Head brown, prothorax red, elytra deep brown, with shoulders and an apical spot on each ferruginous
[nes, Andr., p 205]
haliploides var. *asthenes*
[sus, Andr., p 206]
haliploides var. *diversa*
u 2

- 17 (14) Upper surface mainly black, occasionally dark red on head and prothorax, or at apex of elytra
- 18 (19) Elytra with apical third dark red, stria 1 ending very abruptly in front. [p 297.
sauderii, Andr.,
- 19 (18) Elytra with suture and margin only sometimes reddish, stria 1 not ending very abruptly in front
- 20 (5) Upper surface dull, with a conspicuous microsculpture of transverse lines
- 21 (22) Sutural stria clearly impressed; colour dark ferruginous, with head, disk of prothorax, sutural area, and apex of elytra brown. Length 2.5 mm
- 22 (21) Sutural stria lightly impressed; colour light ferruginous, with head and prothorax piceous Length 1.75 mm
- [*nus*, Andr., p. 295.
halipionides var. *nigri-*
- opacus*, Andr., p 298
- [Andr., p. 299.
opacus var. *bicolor*.

476 *Tachys amplians*, Bates

Tachys amplians Bates*, Ann Mag Nat Hist (5) xvii, 1886, p 155,
Andrewes, Ann. Mag. Nat. Hist (9) iii, 1919, p 472; id.,
Revision, 1925, p 475

Colour castaneous, apex of elytra a shade lighter, joints 1 and 2 of antennæ and legs paler.

Head wide, with moderately impressed furrows, diverging a little behind; mentum without pores; eyes not prominent; antennæ submoniliform, joints 2 and 3 equal. Prothorax convex, two-thirds wider than long, sides very little contracted and only slightly sinuate behind, so that base is much wider than apex, hind angles slightly obtuse but not rounded, without carina; basal sulcus moderately deep, vaguely crenulate, interrupted, and with a pore on each side of middle. Elytra very convex, short-ovate, rather pointed at apex, border smooth, just reaching hind angles of prothorax. Three finely crenulate and moderately impressed dorsal striae, 1 entire, 2 and 3 nearly reaching base but considerably shortened behind, 4 very faint, 5 just traceable, 8 deep on apical half, striole short and curved, on middle of elytron, the pore half-way along it; dorsal pore small, on stria 3, at about a half. No microsculpture

Length, 1.8 mm.

Distribution CEYLON Kandy (in text), Colombo (on label)
(G. Lewis)

Type in the British Museum This is the only specimen seen.

477. *Tachys orphnæus*, sp. nov.

Colour dark castaneous; joints 1 and 2 of antennæ and legs ferruginous

Head with shallow furrows, diverging behind; mentum without pores; eyes moderately prominent; antennæ

rather slender, reaching basal fourth of elytra, joints 2 and 3 equal. Prothorax convex, fully two-thirds wider than long, sides gently rounded in front, only slightly contracted and straight behind, the base much wider than the apex, hind angles slightly obtuse but not rounded, without carina; median line very fine, basal sulcus with some slight crenulation, moderately deep, interrupted, and with two pores at middle. Elytra very convex, short-ovate, somewhat pointed at apex, a third wider than prothorax, about a fifth longer than wide, border smooth, hardly extending inwards beyond hind angles of prothorax; striae vaguely crenulate, 1 entire and moderately deep, 2 and 3 extremely lightly though quite visibly impressed, 4 and 5 just visible, 8 deep on apical half, represented by large pores in front, striae short, curved, on middle of elytron, the pore half-way along it, dorsal pore small, on stria 3 at about a half.

Length, 2.1 mm

Distribution UNITED PROVINCES Chakrata Range, Haldwani (S. N. Chatterjee)

Type in the British Museum

478 *Tachys haliploides*, Bates

Tachys haliploides Bates*, Ann Mus Civ. Gen. xxxii, 1892, p 289, Andrews, Ann Mag Nat. Hist (9) iii, 1919, p 472, id., Revision, 1925, p 478, t. 3, ff 11 and 18, id., Trans. Ent Soc Lond. 1928, p 4

Colour pale ferruginous, apex of elytra sometimes darker and with a vague lighter ocellate apical spot on each elytron (Bates says that joints 3 to 11 of the antennae are occasionally fuscous, but in six typical specimens before me, including the type, and in numerous other examples in my collection, the antennae are uniformly pale)

Head with short, single furrows, diverging a little behind, mentum without pores, eyes rather flat, antennae a little dilated at apex, joints 2 and 3 equal. Prothorax convex, two-thirds wider than long, hardly contracted behind, so that base is much wider than apex, sides rounded in front and somewhat explanate behind, the angles right and fairly sharp, with a rudimentary carina, median line very fine, basal sulcus moderately deep, subcrenulate, interrupted, and with two pores at middle, the foveæ punctiform. Elytra very convex, ovate, barely a third longer than wide, border smooth, hardly extending inwards beyond hind angles of prothorax, stria 1 finely crenulate, practically entire, though very shallow near base, the other striae obsolete (though as the surface is translucent their course may often be traced by the large underlying punctures), 8 deep on apical half, obsolete in front,

striae short and rather deep, curving slightly inwards in front, the pore on inner (Bates says outer) margin, rather behind middle, a single minute dorsal pore at about middle on the site of stria 3. No microsculpture. Prosternum not sulcate, metasternum with a transverse groove in front, protarsi ♂ without apparent dilatation, claws minutely denticulate.

Length 2 1-2 4 mm

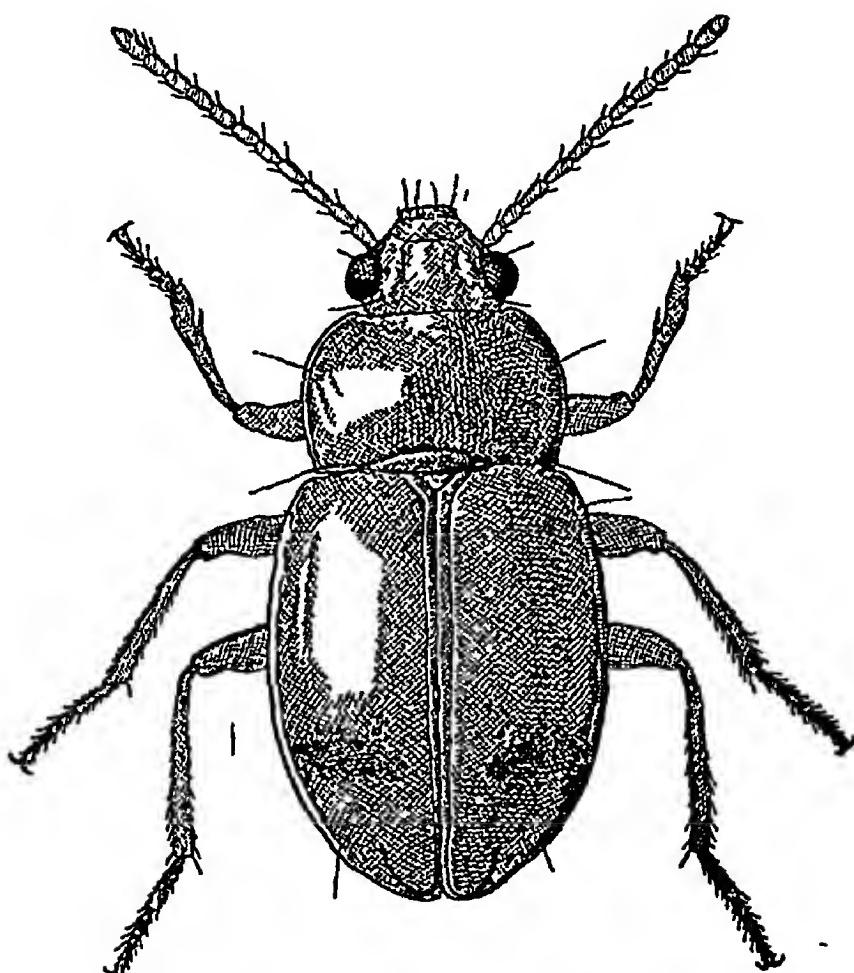


Fig. 50.—*Tachys halaploides* Bates

Distribution UNITED PROVINCES Dehra Dun (*M. Cameron*); Haldwani (*H G Champion*) CENTRAL PROVINCES Nagpur (*E A d'Abreu*) BOMBAY Belgaum (*H E Andrewes*). MADRAS Nilgiri Hills (*H L Andrewes*), Vizagapatam, Chirup-palli (*R S Patuck*) BIHAR Barwa (*Cardon*) BURMA Bhamo, Karen Hills, and Thageta (Tenasserim) (all *L Fea*) NICOBAR Is TONG-KING PHILIPPINE Is. JAVA CELEBES NEW GUINEA
Type in the Genoa Civic Museum

Mr H L Andrewes notes that specimens were abundant amongst debris on moist ground and that he took some also "in toadstool"

This species, which is taken as typical of the Eastern form of the group is larger than the two palearctic species, *globulus* Dej and *caraboides* Motsch, it is coloured much like the latter, but is a little wider, with only one finely crenulate dorsal stria

478a *Tachys haliploides* var *nigrinus*, Andr.

Tachys haliploides Bates var *nigrinus* Andrewes, Revision, 1925, p 479, id. Trans Ent Soc Lond 1930, p 3

Specimens from the Himalayas differ from the typical ferruginous form in being black on the upper surface, the head, prothorax, sutural interval, and margin of the elytra sometimes very dark red, underside piceous red, tibiae and tarsi ferruginous, femora a little darker antennae also ferruginous, with the middle joints slightly infuscate. Apart from colour they do not seem to differ from the typical form, though the prothorax appears a little wider relatively to the elytra, the basal sulcus not quite so deep near the hind angles and the surface along base, especially at sides with a slightly explanate appearance

The examples from Sikkim are about 2 mm long, those from the United Provinces about 1 75 mm

Distribution UNITED PROVINCES West Almora, Upper Gumti Valley, Haldwani (Nandhaur River), and Chilla (Ganges River) (all H G Champion) BENGAL Gopaldhara (H Stevens), Darjeeling (R W G Hingston) ASSAM Assam Valley (Doherty)

Type in my collection

478b *Tachys haliploides* var *asthenes*, Andr

Tachys haliploides Bates var *asthenes* Andrewes, Revision, 1925, p 480

Elytra ferruginous, slightly mottled with brown in front, the apex piceous, the head and prothorax dark brown. Similar to var *nigrinus*, but with the sides of both prothorax and elytra rather more rounded, the hind angles of the former distinctly obtuse, the base without the explanate appearance of *nigrinus*

Length, 1 75 mm

Distribution PUNJAB Simla Hills, Gahan, 7000 feet (S N Chatterjee) UNITED PROVINCES. West Almora and Haldwani (H G Champion), Siwalik Hills, Mohan Rau (M Cameron), Dehra Dun

Type in the British Museum

478 c *Tachys haliploides* var *diversus*, *Andr*

Tachys haliploides Bates var *diversus* Andrewes, Revision, 1925, p 480

Head brown, prothorax ferruginous, elytra deep brown, each with a large shoulder-spot reaching suture, and a small rounded apical spot flavous, antennæ and legs very pale. The prothorax is nearly as wide as in the type-form but rather more contracted behind, the elytra distinctly narrower, so that the insect has a more elongate appearance

Length, 1 9 mm

Distribution EASTERN DUARS (*H Stevens*)

Type in my collection.

479 *Tachys buxans*, *Andr*

Tachys buxans Andrewes, Revision, 1925, p 476

Colour rather dark testaceous, elytra a little darker towards apex, especially along margins and suture, joints 1 and 2 of antennæ (rest fuscous), and legs flavous

Head with moderately deep furrows, diverging a little behind, mentum without pores, eyes rather flat, antennæ reaching basal third of elytra. Prothorax convex, a half wider than long, base much wider than apex, sides rounded in front, gently contracted behind, without trace of sinuation, the angles a little obtuse and not very sharp, with a rudimentary carina, basal sulcus moderately deep, finely crenulate, interrupted, and with two pores at middle, the foveæ punctiform just inside the carina. Elytra ovate, convex, two-fifths longer than wide, border smooth, just reaching hind angles of prothorax, sutural stria smooth, entire, though hardly impressed close to base, 8 deep on apical half, striole fairly long, on middle of elytron, curving strongly inwards in front, the pore rather behind middle, dorsal pore small, on stria 3, at about middle. No microsculpture. Claws very clearly denticulate

Length, 2 5 mm

Distribution MADRAS Palni Hills, on the shores of Kodai-kanal Lake (*S W Kemp*)

Type in the Indian Museum, Calcutta

480 *Tachys latissimus*, *Motch*

Tachys latissimus Motchulsky *, Bull Mosc 1851, n, p 508. Andrewes, Revision, 1925, p 478, id, Trans Ent. Soc Lond. 1928, p 4

Elaphropus latissimus Motchulsky, Études Ent viii, 1859, p 40, t f 4, id, Études Ent xi, 1862, p 37, Andrewes, Ann Mag Nat Hist. (9) iii, 1919, p 472

Very closely allied to *haliploides*, but on average a little smaller, the elytra of the same shape but the prothorax

relatively smaller, the antennæ fuscous except the basal joints, the apical spot generally conspicuous. Typical specimens are intermediate between *haliploides* and *gracilis*; there are numerous examples of both of Motchulsky's species in the Prague Museum, whence no doubt his material came, and it seems quite possible that all the specimens belong to one very variable species. The differences, however, seem at present too great to justify their union; *haliploides*, with its pale antennæ and nearly uniformly pale elytra, seems the most distinct of the three, and has accordingly been treated as standing by itself, but *gracilis* may reasonably be regarded as not more than a variety of *latissimus*.

Distribution BURMA. Tenasserim (J. W. Helfer)
Type in the Moscow University Zoological Museum

481 *Tachys latissimus* var *gracilis*, Motsch

Elaphropus gracilis Motchulsky *, Études Ent. xi, 1862, p. 36;
id., Études Ent. viii, 1859, p. 40 (nomen nudum); Andrewes,
Ann Mag Nat Hist (9) vii, 1919, p. 472
Tachys subfasciatus Putzeys * (not Motchulsky), Ann Mus Civ.
Gen. vii, 1875, p. 739
Tachys unistriatus Putzeys *, Ann. Mus Civ. Gen. viii, 1875, p. 740
Tachys haliploides Bates var *contractulus* Bates *, Ann. Mus Civ.
Gen. xxxii, 1892, p. 290
Tachys gracilis Andrewes, Revision, 1925, p. 477
Tachys latissimus Motchulsky var *gracilis* Andrewes, Trans. Ent.
Soc. Lond. 1925, pp. 4 and 20

The colour of the antennæ and elytra are similar to those of the type-form, and the only difference of any importance is in the form of the elytra, which are relatively longer and narrower.

Distribution BOMBAY. Belgaum, Parle (H. E. Andrewes)
UNITED PROVINCES. Haldwani (H. G. Champion) BIHAR.
Purneah, Kierpur (C. Paine) BENGAL Calcutta (F. H. Grarely), Sardah (F. W. Champion). Diamond Harbour (T. D. A. Cockerell). EASTERN DUARS (H. Steene) ASSAM
Garo Hills, Someswari River (S. H. Kemp and B. Chopra) BURMA Tenasserim (J. W. Helfer) and "Burma" (L. Fea)
NICOBAR IS SIAM CAMBODIA JAVA CELEBES NEW GUINEA.

Type in the Moscow University Zoological Museum, those of *subfasciatus* and *unistriatus* in the Brussels Museum, that of *contractulus* in the Genoa Civic Museum.

482. *Tachys saundersi*, Andr

Tachys saundersi Andrewes, Revision, 1925, p. 482; id., Tijdschr
Ent. lxxii, 1929, p. 307

Colour piceous black above, dark testaceous beneath, apical third of elytra vaguely red, the colour sometimes extending

a little way forward along sides, antennæ and legs ferruginous

Head wide, with rather shallow furrows, diverging a little behind, mentum without pores, eyes not prominent, antennæ submoniliform, dilated at apex *Prothorax* convex, quite two-thirds wider than long, base much wider than apex, sides rather strongly rounded in front, barely contracted and not sinuate behind, the angles right, not very sharp, and projecting slightly backwards, with a rudimentary carina; basal sulcus deep at sides, smooth, widely interrupted, and with two pores at middle *Elytra* convex, with strongly rounded sides, a third longer than wide, border smooth, just reaching hind angles of prothorax; sutural stria hardly orenulate, fairly deep, reaching apex but terminating very abruptly at a little distance from base, 8 deep behind, striole rather short and nearly straight, on middle of elytron, the pore half-way along it, dorsal pore small, on site of stria 3, at about middle No microsculpture Metasternal process with a deep arcuate groove behind it Claws denticulate

Length, 1 75-2 mm

Distribution SIKKIM (*Harmand*) MALAY STATES JAVA SUMATRA

Type in my collection

The species bears a strong resemblance to *haliploides* var *magninus*, but has the apical third of the elytra dark red, the eyes a little less flat, the prothorax wider and hardly contracted behind, the elytra wider and with more rounded sides, the sutural stria deeper and terminating very abruptly in front

The typical form is found in the Malay States and Sumatra Examples from Java are rather more globular in form and the apex of the elytra is not red, but stria 1 is equally deep and ends as abruptly in front

The specimens from Sikkim (Paris Museum) are similar in colour to the type-form, but with only the apical border red The characters generally, including the form of stria 1, are similar, but both prothorax and elytra are a little narrower, the former more contracted behind

483 *Tachys opacus*, And,

Tachys opacus Andrewes, Revision, 1925, p 483

Colour of the upper surface dark ferruginous, dull, head, disk of prothorax, suture, disk, and apex of elytra, and underside more or less suffused with brownish red, base of venter piceous joints 1 to 4 of antennæ and legs flavous, rest of antennæ and penultimate joint of palpi fuscous

Head with moderately deep furrows, diverging behind and bounded outwardly on each side by a ridge, clypeus with

a lateral border · mentum without pores ; eyes not prominent antennæ slightly dilated at apex Prothorax convex quite two-thirds wider than long, base much wider than apex. sides rounded, gently contracted behind, without trace of sinuation the angles slightly obtuse, without carina ; basal sulcus not very deep, very indistinctly crenulate, rather narrowly interrupted, and with only a vague pore on each side of middle Elytra ovate, convex, about a third longer than wide, border smooth, just reaching hind angles of prothorax ; stria 1 rather shallow and faintly crenulate, not quite reaching base, 2 just visible, 8 deep behind, striole on middle of elytron, rather strongly curved, the pore well behind middle , dorsal pore distinct, on site of stria 3, just before middle Microsculpture very clear, the elytra with closely placed transverse lines , on the prothorax these lines vary in direction but on the disk they are longitudinal , on the front and vertex there is a transverse reticulation Metasternum with a transverse groove in front Claws denticulate.

Length, 2 5 mm

Distribution BENGAL Sardah (*F. W. Champion*), "Bengal" (*J. Nielner*)

Type in the British Museum

483a *Tachys opacus* var *bicolor*, Andr

Tachys opacus Andrewes var *bicolor* Andrewes, Revision, 1925,
p 484

In the same locality Mr Champion also took four examples which differ from the typical form in their much smaller size, viz , 1·75 mm against 2 5 mm The elytra are uniformly light ferruginous. the head and prothorax piceous, with the side-margins of the latter lighter The shape is slightly narrower and the sutural stria is less impressed The microsculpture is identical, producing the same dull appearance

Type in the British Museum

In the Copenhagen Museum there are examples from Bengal ("Galatea" Expedition) which agree with var *bicolor* in form, but are about 2 mm in length Two of them agree in colour, but in the others the suture, disk, and apex of the elytra are tinged with brown as in the type-form

Key to the umbrosus-group

- | | |
|---|------------------------------------|
| 1 (2) Elytra with five dorsal striae, the hind dorsal pore placed on or near stria 4, a microsculpture present Length 3 mm | [p 300
<i>umbrosus</i> , Notch |
| 2 (1) Elytra with only one dorsal stria, very lightly impressed on basal half, hind dorsal pore on or near the site of stria 5 no microsculpture present Length 2 25 mm | [p 301
<i>coracina</i> , Putz , |

484 *Tachys umbrosus*, Motch.

- Tachys umbrosus* Motchulsky *, Bull Mosc. 1851, II, p 507, Putzeys, Ann Mus Civ. Gen vii, 1875, p 745, Andrewes, Revision, 1925, p 488, t 3, f. 12 and t 4, ff 21 and 25, id., Trans Ent Soc Lond 1928, p 3, id., Fauna of British India, Carabidæ, I, 1929, p 16, f 4b, id., Tijdschr Ent Ixxii, 1929, p 307, id., Treubia, VII, Suppl 1930, p 331
- Tachys parallelus* Motchulsky *, Bull Mosc 1851, II, p 507 (not Käf Russ 1850, 8 (note 3)), Andrewes, Trans Ent Soc Lond 1928, p 4
- Acupalpus extremus* Walker *, Ann Mag Nat Hist (3) II, 1858, p 204, Andrewes, Trans Ent Soc Lond 1919, p 190.
- Tachymenis umbrosa* Motchulsky, Études Ent xi, 1862, p 32
- Tachyla nietneri* Schaum *, Berl Ent Zeitschr 1863, p 88
- Tachyla umbrosa* Bates, Ann Mag Nat Hist (5) xvii, 1886, p 151, id., Ann Mus Civ Gen xxxii, 1892, p 296

Colour piceous, palpi, antennæ, and tarsi more or less dark ferruginous, apex of femora and tibiae brown

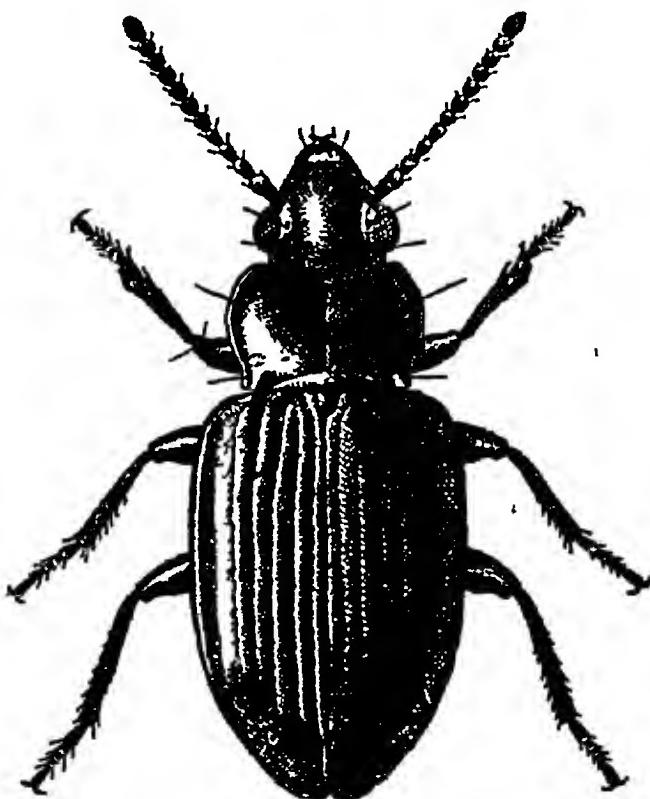


Fig. 51.—*Tachys umbrosus* Motchulsky

Head with the furrows short, shallow, and a little divergent behind, mentum without pores, eyes moderately prominent, antennæ short and thick, moniliform, joint 2 shorter than 3. *Pronothorax* rather flat, a little more than a half wider than long, sides with the border minutely setulose, rounded in

front, contracted and faintly sinuate behind, the base very little wider than the apex, hind angles right and sharp, with a carina nearly parallel with the sides, median line deep but not reaching extremities, basal sulcus fairly deep not crenulate, interrupted at middle, the median line just reaching the interruption. Elytra flat, elongate-ovate, border setulose, rounded at shoulder, and extending inwards very little beyond hind angles of prothorax, five lightly impressed, finely punctate, dorsal striae, decreasing in depth outwards, 1 entire, the others nearly reaching base but shortened behind, 6 very faint, 7 obsolete, 8 deep but almost interrupted in front, where a few punctures only are present, striole long, nearly parallel with and adjacent to margin, the pore well behind middle; dorsal pores on stria 4 at about a fifth and near the end of the striole respectively. Microsculpture conspicuous, more or less isodiametric on head and prothorax, the meshes on the elytra moderately transverse, the surface generally is punctulate. Underside setulose, prosternum slightly sulcate, metasternal process rather finely bordered, protarsi ♂ with two dilated joints. Claws denticulate.

Length, 3 mm

Distribution SOUTH-EAST ASIA. Widely distributed and found as far south as New Guinea, but not reaching Japan in the north. It occurs in Ceylon, but in India it seems to be confined to the Himalayan tract.

Type in the Moscow University Zoological Museum, that of *parallelus* presumably also in Moscow, but there is a co-type in the Deutsches Entomologisches Museum at Berlin-Dahlem; that of *extremus* in the British Museum, that of *nietneri* in the Deutsches Entomologisches Museum.

Examples of this species have been found under the bark of various trees, including *Pinus longifolia* Roxb., *P. khasya* Royle, *P. excelsa* Wall, *Planchonia andamanica* King, *Grewia tiliæfolia* Vahl, and *Shorea robusta* Gaertn. It is very closely allied to the palaearctic *T. nanus* Gyllh., also found under bark.

485 *Tachys coracinus*, Putz

Tachys coracinus Putzey s*, Ann Mus Civ Gen vii, 1875, p 739, Andrewes, Revision, 1925, p 491, id, Tijdschr Ent Ixvii, 1929, p 307.

Tachys remotiporis Bates *, Ann Mus Civ Gen. xxii, 1892, p 290

Colour black, shiny, upper surface sometimes faintly blue, or æneous, palpi, antennæ, tibiae, and tarsi ferruginous.

Head with the furrows moderately deep and long diverging behind, and bounded outwardly on each side by a ridge, mentum without pores, eyes rather prominent, antennæ

moniliform. Prothorax moderately convex, two-thirds wider than long, sides well rounded in front, contracted and slightly sinuate behind, so that the base is not much wider than the apex, the border microscopically setulose, hind angles right, a little reflexed, and without carina, basal sulcus fairly deep, not crenulate, interrupted at middle, the median line, which is moderately deep behind, just reaching the interruption. Elytra ovate, moderately convex, not quite a half longer than wide, border almost imperceptibly dentate and setulose, rounded at shoulder, just reaching hind angles of prothorax, marginal channel wide, stria 1 distinctly impressed on apical half but not nearly reaching base, 2 sometimes just traceable, 5 deep at extremities, shallow but not interrupted in front, some very long hairs issuing from the pores along its course, striole long, nearly parallel with and not far from margin, slightly hooked inwards in front, the pore far back near apex, dorsal pores large and distinct, on or near the site of stria 5, front one at a fifth from base, hind one at a fourth from apex, near the front end of the striole, surface very smooth and shiny. Microsculpture inappreciable. Body beneath finely punctate and setulose, prosternum not sulcate, metasternal process narrowly bordered, claws finely denticulate.

Length, 2.25 mm.

Distribution ASSAM Patkai Mountains and Sadiya BURMA Kawkareik, Meetan, and Palon (*L. Fea*), Mohuyn River (*C. F. C. Beeson*); Tenasserim (*J. W. Helfer*) MALAY STATES SIAM TONG-KING JAVA SUMATRA MENTWEI IS BORNEO CELEBES PHILIPPINE IS

Type, as also that of *remotipennis*, in the Genoa Civic Museum

Mr C J Saunders took specimens under bark at Singapore, and Dr Beeson's example bears a note, "ex pupal chamber in *Vitex*".

According to a note (no 10021, 11 ii 1935) sent by Mr G H Corbett, of the Entomological Division of the Agricultural Department, Malay States, to the Imperial Institute of Entomology, larvæ of this species were found on the egg, young grub, and pupæ of *Odoiporus* and *Cosmopolites*, and are presumed to be predatory on them.

Genus LYMNASTIS.

Lygnastis Motchulsky, Études Ent xi, 1862, p 27, Reitter, Wien. Ent Zeit 1884, p 124.

Limnastus Pioccard de la Bruliere, Ann Soc Ent Fr 1875, p 436, Bedel, Catalogue raisonné des Coléoptères du Nord de l'Afrique, 1896, p 79.

Lygnastis Ganglbauer, Kaf Mitteleur 1, 1892, p 181, Andrewes, Revision of the oriental species of the genus *Tachys*, Ann Mus

Cit Gen li, 1925, p. 493, Jeannel, Révision du genre *Limnastes*,
 Soc Ent Fr Livre du Centenaire, 1932, p. 167
Limnastes Bedel, Catalogue raisonné des Coléoptères du Nord de
 l'Afrique, 1896, p. 54
Zuphiolum Fairmaire, Bull Soc Ent Fr. 1896, p. 344

TYPE, *Lymnaeum indicum* Motsch (India and Burma)

Colour mainly ferruginous Body flat, elongate, punctulate, and with a short erect pubescence

Head small, eyes rather flat, adjoining buccal fissure, minutely setulose, two supraorbital setæ present (Indian species), frontal impressions generally wide and shallow; antennæ short but fairly stout and more or less moniliform, pubescent throughout, labrum truncate or arcuate, sex-setose, clypeus transverse, bisetose; mandibles short but fairly stout, mentum emarginate, but without tooth in the emargination (except *pilosus*), and without the forameniform pores sometimes seen in *Tachys*, ligula bisetose fused with the wide membranous paraglossæ, maxillæ as in *Tachys*, maxillary palpi well developed, penultimate joint strongly dilated and setulose, last joint narrow, subulate, labial palpi much less developed, penultimate joint moderately dilated and bearing only a few setæ, last joint very slender, longer than in the maxillary palpi.

Prothorax subcordate, base produced strongly backwards at middle, side border minutely setulose, a seta at apical third and another just before hind angle, median line and transverse impressions rather slight

Elytra flat, more or less truncate at apex, the border setulose (the setæ longer than is usual in *Tachys*) and denticulate behind shoulder, but not extending inwards beyond it, more or less striate, but stria 8, the scutellary striole, and the apical striole all wanting, two dorsal pores on or close to stria 3 (except in *pullulus*), one at apical third the other not far from apex

Prosternum not sulcate, metasternal process very finely bordered between the mesocoxæ, last ventral segment ♂ with two ♀ with four setæ nearly in line, protibiae with the outer margin truncate at apex, but more emarginate than in *Tachys*, protarsi ♂ with the first two joints moderately dilated and produced inwards at apex, claws smooth

A microsculpture is present in all the Indian species except *indicus*

Range Southern Asia and Southern Europe, Africa, Australia

Very little is known of the habits and nothing of the life-history of these minute insects, but *L. indicus* has been taken flying to light

Key to the Species

- 1 (2) Colour dark ferruginous; surface very coarsely punctate, elytral striae punctate; no microsculpture present. Length 2.2 mm. *indicus*, Motsch., p 304
- 2 (1) Colour light ferruginous, surface moderately or finely punctate; elytral striae impunctate or vaguely crenulate; microsculpture present
- 3 (6) Elytral striae impressed, at least near apex; meshes of the microsculpture on the elytra transverse. Length 2 mm. or over.
- 4 (5) Upper surface uniformly ferruginous, prothorax equally contracted at its extremities, elytral striae 4 and 5 indistinctly impressed; puncturation moderate
- 5 (4) Prothorax and elytra ferruginous, head piceous black; prothorax with its base wider than its apex; elytral striae 4 and 5 distinctly impressed; puncturation fine [p 306.]
- 6 (3) Elytral striae very faint, 1 and 2 lightly impressed near apex only, meshes of the microsculpture on the elytra isodiametric. Length 1.7 mm. *pilosus*, Bates, p 305
atricapillus, Bates,
- pullulus*, Motsch., p 306

486 *Lymnastis indicus*, Motsch.

Lymnaeum indicum Motschulsky, Bull. Mosc. 1851, ii, p 507.
Lymnastis indicus Motschulsky *, Etudes Ent. xi 1862, p 27;
 Andrewes, Trans. Ent. Soc. Lond. 1928, p 3.
Limnastis indicus Andrewes, Revision, 1925, p 494; Jeannel,
 Révision, 1932, pp 174 and 176, fig. 18-20

Colour rather dark ferruginous

Head convex, with two small rounded impressions, not extending on to clypeus and hardly reaching backwards beyond the front margin of the eyes, antennæ moniliform; surface with few but large punctures. Prothorax slightly convex, about equally contracted at extremities, widest well before middle, sides strongly rounded in front, then straight to the hind angles, which are a little obtuse, the pores on each side forming a slight indentation in front of them: median line relatively deep, front transverse impression with some large punctures marking its course, basal sulcus not very deep, somewhat removed from base in the middle, obsolete at sides, surface with few but large punctures. Elytra elongate, with square shoulders, striae lightly impressed, punctate, hardly reaching base, 1 and 2 deeper behind, reaching apex, where 2 curves strongly outwards so that interval 2 is very wide, 2 to 4 fairly distinct, 5 rather faint, 6 and 7 indicated by punctures only; - intervals with a single row of

punctures along the middle, much larger than those in the striae, the puncturation not quite regular and less so at sides, the dorsal pore at apical third indistinct No appreciable microsculpture

Length, 2.2 mm

Distribution BENGAL. Calcutta (*F. H. Gravely*) BURMA : "Tenasserim" (*J. W. Helfer*), Victoria Point (*E. T. Atkinson*).

Type in the Moscow University Museum It is probable that this and all the other known specimens, with the exception of the Calcutta and Victoria Point examples, came from Helfer's collection, now in the Prague Museum

487 *Lymnastis pilosus*, Bates

Lymnastis pilosus Bates *, Ann. Mus Civ. Gen. xxxii, 1892, p 296.
Tachys scutiger Sloane, Proc Linn. Soc N S W. 1903, p 582;

id Proc Linn Soc N S W 1920, p 321

Lymnastis pilosus Sloane, Proc Linn Soc. N S W. 1921, p 208;
Andrewes, Revision, 1925, pp 494 and 495, Jeannel, Revision, 1932, pp. 175 and 179, ff 24 and 27-30

Colour light ferruginous

Head with fairly large, wide, frontal impressions, extending on to the clypeus, eyes rather flat; antennae submoniliform, surface with few but fairly large punctures *Prothorax* subquadrate, a fourth wider than long, base with its sides somewhat oblique, wider than apex, sides faintly sinuate before base, the angles sharp and hardly more than right, front transverse impression obsolete, median line and basal sulcus shallow, surface sparsely punctate *Elytra* flat, twice as long as wide, the truncature at apex with a rather wide re-entrant angle at suture, striae lightly impressed and impunctate, or vaguely crenulate, 6 and even 7 being distinguishable, 1 to 3 clearly impressed and turning outwards near apex, 3 a little more so than 2, so that interval 3 is widest at that point and has on it the apical discal pore, very near to stria 3, which curves inwards again at extreme apex and joins 1, intervals with the punctures fine and numerous, interval 4, at least in front (as also the outer intervals), with two irregular rows, one on each side, adjoining striae 3 and 4 respectively (Bates mentions only one dorsal pore, though there are actually two) Microsculpture very clear, reticulate, fine on the elytra, where the meshes are small and moderately transverse, coarser on the head and prothorax, where they are isodiametric or only slightly transverse

Length, 2.2 mm

Distribution UNITED PROVINCES - Haldwani (*H. G. Champion*) BIHAR Barwa (*Cardon*) BENGAL : Calcutta (*S. W. Kemp* and *F. H. Gravely*), Sardah (*F. W. Champion*), Eastern Bengal State Railway, between Sorbhog and Golakganj

(*S. W. Kemp*) BURMA Bhamo, Katha, and Palon (*L. Fea*), Shwegu (*H. G. Champion*); Tenasserim (*Helper*) MALAY STATES (Singapore and Kuala Lumpur) TONG-KING PHILIPPINE IS FORMOSA SUMATRA JAVA BORNEO CELEBES NEW GUINEA AUSTRALIA

Type in the Genoa Civic Museum

488 *Lymnastis atricapillus*, Bates

Lymnastis atricapillus Bates *, Ann Mus Civ Gen xxxviii, 1892, p 297

Lymnastis atricapillus Andrewes, Revision, 1925, pp 494 and 496, Jeannel, Revision, 1932 pp 174 and 177

Colour light ferruginous, the head piceous black (clypeus and labrum pale), front and hind margins of prothorax tinged with brown.

Head with wide and not very deep frontal impressions, eyes moderately prominent, antennæ submoniliform, surface with some indistinct punctuation. *Prothorax* subquadrate very little contracted behind base evidently wider than apex, sides very faintly sinuate before base, the angles about right; median line moderately deep, both front transverse impression and basal sulcus rather shallow, surface sparsely punctate. *Elytra* shorter than in *pilosus*, similarly truncate and with a slight re-entrant angle, striæ distinct and vaguely crenulate, 1 to 3 deeper at apex, 4 and 5 quite distinct on disk, 6 and 7 obsolete, interval 3 a little wider than the others at apex, apical dorsal pore placed on it near apex as in *pilosus*, each interval with a similar row of rather fine punctures, a little less closely placed. Microsculpture as distinct as in *pilosus*, the meshes on the elytra moderately transverse, on the prothorax also transverse but a little larger, isodiametric on the head, but smaller and more conspicuous.

Length, 2 1 mm

Distribution BURMA Katha (*L. Fea*) BORNEO

Type in the Genoa Civic Museum

489 *Lymnastis pullulus*, Motch [Plate I, fig 1]

Lymnastis pullulus Motchulsky *, Études Ent xi, 1862, p 31, Andrewes, Trans Ent Soc Lond 1928, p 10

Lymnastis liratus Andrewes, Revision, 1925, pp 494 and 497, Jeannel, Revision, 1932, pp 175 and 178

Lymnastis pullulus Andrewes, Revision, 1925, p 498, Jeannel, Révision, 1932, p 176

Colour ferruginous, head, apex of elytra, and a triangular patch at their base brownish

Head with short, shallow, wide impressions, eyes very flat, antennæ moniliform, vertex clearly punctate. *Pro-*

thorax a little more than a third wider than long, equally contracted at extremities, base with its sides very oblique, sides rounded in front and sinuate a little behind middle, the angles slightly obtuse and reflexed, front transverse impression very faint, median line impressed at middle only, basal sulcus uneven, fairly deep, surface with some coarse scattered punctures, finer on the disk. *Elytra* flat, a half longer than wide, with square shoulders; striae very faint, but 1 and sometimes 2 towards apex are generally lightly impressed, 3 to 5 just traceable; intervals each with a row of minute setiferous pores, more widely spaced towards apex, 2 and 3 widening near apex, with the single dorsal pore on 3, not far from apex. Microsculpture isodiametric throughout, but not very distinct, so that the surface is fairly shuny.

Length, 1 7 mm

Distribution BENGAL. Calcutta (*F. H. Gravely*)

Type in the Moscow University Museum, that of *leiatus* in the Indian Museum, Calcutta

The Calcutta specimens were taken mostly "at light," but one of them came "from base of leaf of tall palm-tree"

Easily distinguished from other Eastern species by its small size, obsolete striae, uniformly isodiametric microsculpture, and single dorsal pore

Group XVIII POGONINI

Though rich neither in genera nor species this group has representatives in most regions of the globe, and four of the genera are met with in the Indian region. The head has two supraorbital setæ on each side, the mandibles have a seta in the scrobe, the ligula is fairly wide, with two setæ at apex, usually placed so close together that they appear as one, the paraglossæ free at apex and extending but little beyond the ligula, the palpi as a rule with the last two joints about equal in length, the last joint either pointed or truncate at apex, the penultimate joint of the labial palpi bisetose, the antennæ with the first two joints glabrous, the prothorax has two lateral setæ on each side, the elytra are with or without a basal border, stria 8 usually joining 9 at a little distance behind the shoulder. The metacoxæ are contiguous, the apical ventral segment has a single seta on each side in the ♂, two setæ in the ♀, the protarsi ♂ usually with two dilated joints.

The four Indian genera should, if strictly treated, have been split up into two or, possibly, three subgroups, but there are only five species to be dealt with altogether, and it appeared unnecessary to adopt such an arrangement here.

Key to the Genera

- 1 (6) Ligula with the two apical setæ arising in a single pore and appearing as one, tooth of mentum bifid, elytra with the striae at least moderately impressed
- 2 (5) Ligula truncate at apex, neck not or hardly constricted, elytra with a basal border, tarsal joints sulcate
- 3 (4) Head not incrassate behind, antennæ filiform, not or only slightly dilated at apex, prothorax more-or-less cordate, form moderately wide, the elytra not more than a half longer than wide
- 4 (3) Head incrassate behind, antennæ dilated and more or less moniliform at apex, prothorax quadrate, form very long and narrow, the elytra more than twice as long as wide .. .
- 5 (2) Ligula rounded at apex, neck deeply constricted, elytra without basal border, tarsal joints not sulcate
- 6 (1) Ligula with the two apical setæ, though adjacent, separated from each other, tooth of mentum not bifid, elytra with only the sutural striae impressed . . .

POGONUS, p 308

SYRDENUS, p 311

DIPLOUS, p 312

LISSOPOGONUS, p 314

Genus POGONUS.

Pogonus Stephens, Ill Brit Ent Mandib 1, 1828 (May), p 106, Dejean, Spec Gen Col III, 1828 (Nov), p 6; Lacordaire, Gen Col 1, 1854, p 368, Chaudoir, Essai monographique sur les Pogonides, Ann Soc Ent Belg XIV, 1871, p 23, Reitter, Best-Tab europ Col LXV 1908, p 3

TYPE, *Carabus chalceus* Marsh (Europe and Mediterranean region)

Head convex, with deep, more or less parallel frontal sulci, neck not constricted, eyes large and prominent, placed at a little distance from the buccal fissure, labrum and clypeus both truncate or slightly emarginate in front, the former sexsetose, the latter bisetose, clypeal suture generally faint, mandibles short but fairly stout, with a slight tooth at middle, ligula fairly wide, truncate at apex, the apical angles sharp, two setæ at middle placed so closely together as to appear but one, paraglossæ small, free at apex, and extending a little beyond ligula, mentum emarginate, with a cleft tooth of variable length in the emargination, epilobes narrow, submentum with two setæ on each side, maxillæ with the outer lobe two-jointed, the inner one fringed within with bristles, hooked and very sharp at apex, palpi small, pointed at apex, the last two joints equal, antennæ rather short, joint 1 stout, equal in length to 3, 2 about two-thirds of 1, the rest about three-fourths of 1.

Prothorax convex, more or less cordate, the sides bordered by *Elytra* moderately convex, subovate, sides practically without sinuation before apex, a basal border present, 9-striate, the striae more or less punctate, a scutellary striole present, stria 8 joining 9 behind the shoulder.

Sterra prosternal process furrowed, glabrous, metasternal process with an angular border, fitting into an emargination of the mesosternum, metepisterna elongate. *Venter* in the apical segment ♀ the inner pair of setae is placed at a little distance from the margin. Legs. tibiae and tarsi furnished with bristles, but the protibiae have only a few short spines on the outer margin near apex, tarsal joints glabrous on the upper side, unisulcate, joint 5 setulose beneath, claws smooth.

Range. India, palearctic and Nearctic regions, Africa, and Australia.

These insects live either on the sea-coast or, more frequently, inland on the shores of salt-water lakes or marshes.

The specimen described by Motchulsky under the name of *Pogonus hindustanus* (Bull. Mosc. 1864, II, p. 192) is an example of *Abacetus placidulus* Walk.

Key to the Species

- | | |
|---|---------------------------------|
| 1 (2) Prothorax gently rounded in front and slightly sinuate behind, the hind angles obtuse and hardly projecting laterally, elytra with nearly parallel sides, colour mainly dark æneous . . . | <i>birói</i> , Csiki, p. 309. |
| 2 (1) Prothorax well rounded in front and strongly sinuate behind, the hind angles almost right and projecting laterally; elytra with rounded sides, colour mainly bright æneous . . . | <i>micans</i> , Chaud., p. 310. |

490. *Pogonus birói*, Csiki [Plate II, fig. 6]

Pogonus birói Csiki *, Ann. Mus. Hung. 1907, p. 574; Andrewes, Rec. Ind. Mus. xxii, 1921, p. 341.

Pogonus bironis Scidultz, Arch. Naturg. lxxiv, 1908, II, 2, 1, p. 189.

Colour dark æneous, often with a greenish, bluish, or cupreous tinge; antennæ, epipleura, and apex of elytra more or less ferruginous, palpi and legs flavous.

Head with fairly deep, nearly parallel, frontal furrows, extending on to clypeus in front and diverging a little behind, clypeal suture rather faint, antennæ not extending far beyond base of elytra; surface impunctate. *Prothorax* convex, cordate, not quite a half wider than head, three-fourths wider than long, base bisinuate, its sides a little oblique, a fourth wider than apex, sides narrowly bordered, bisetose, rounded in front and gently sinuate close to the hind angles, which are fairly sharp though slightly obtuse and furnished

each with a carina, median line fine, deeper close to, though not quite reaching, base, basal foveæ short but moderately deep, basal area finely and closely punctate, the shallow front transverse impression finely and sparsely punctate *Elytra* convex, subovate, though with nearly parallel sides, a fourth wider than prothorax, not quite two-fifths longer than wide, basal border entire, though irregular and sub interrupted on each side at middle, punctate-striate, the striae and punctures fairly deep on disk in front, much finer at sides and behind, 8 joining 9 at some distance behind shoulder, intervals nearly flat, 3 with four punctures (more rarely five), surface with some vague microscopic punctures. Micro-sculpture isodiametric, very distinct on the elytra, but less clearly visible on the head and prothorax. Last ventral segment ♀ with the inner pair of setæ somewhat removed from margin.

Length, 5·25–7 mm

Distribution BENGAL Calcutta, Dakhindari, Salt Lakes (*B N Chopra*), Sundarbans (*F W Champion*), Sorabkatti (*Jenkins*) ORISSA Balugaon (*N Annandale*) BOMBAY. Bombay (*L Biró*), Kanara (*T R D Bell*) MADRAS: Barkuda Island in Lake Chilka (*N Annandale*), Malabar, Madras (*H Chennappaya*), Vizagapatam (*H S Rao*), Pamban (*B N Chopra* and *H S Rao*), Tuticorin, Pearl Bank Fisheries (*R B S Sewell*) CEYLON. Hambantota (*T B Fletcher*) IRAK

Type in the Hungarian National Museum

An example in my collection is labelled "Burma," but I think this may be a mistake

491 *Pogonus micans*, Chaud

Pogonus micans Chaudoir, Bull Mosc 1842, n, p 820, id, Mon. p 27, Reitter, Best-Tab europ Col lxxv, 1908, p 10, Andrewes, Rec. Ind Mus xviii, 1919, p 99, id, Ent Mitt 1927, p 143

Very similar to *birói* and of the same size, but somewhat greener and brighter in colour, though the microsculpture is similar. Head similar. Prothorax with the sides more strongly rounded in front and more sinuate behind, so that the hind angles are very nearly rectangular and project a little laterally, the front transverse impression with only traces of puncturation, basal area more evidently depressed and with rather coarser puncturation. Elytra with rounded sides, interval 3 with five dorsal pores (in all the examples examined).

Length, 5 5–6 5 mm

Distribution BALUCHISTAN-PERSIAN FRONTIER. Seistan, Labi Baring (*S W. Kemp*). IRAK. PERSIA

Type in Mr René Oberthür's collection

The species has not yet been met with in India, but so many insects found in the great sand belt extending from Morocco to Rajputana extend their habitat as far as Sind that it seemed desirable to include it here.

Genus SYRDENUS.

Syrdenus Chaudor, Essai monographique sur le groupe des Pogonides, Ann Soc Ent Belg xiv, 1871, pp 22 and 34, Reitter, Best Tab europ Col Ixi, 1909, p 5. Lutshnik, Ann Mag Nat Hist (10) vi, 1933, p 689

TYPE, *Pogonus filiformis* Dejean (Mediterranean region)

This genus agrees with *Pogonus* in the great majority of its characters, but differs altogether in facies, the form being long and narrow and the colour generally very pale. The head is incrassate behind, the last joint of the maxillary palpi slightly longer than the penultimate, the antennae fairly stout, more or less dilated and moniliform at extremity. The prothorax is quadrate, not much contracted at extremities, though more so in front than behind, its sides only slightly rounded. The elytra are very long and narrow, with parallel sides, basal border entire, though lightly impressed near the scutellum.

Range India, and the Red Sea and Mediterranean littorals
Apparently found only on the sea-coast

492 *Syrdenus pallens*, sp nov [Plate II, fig 7]

Colour flavous, sometimes a little darker beneath, the apex of the elytra very pale, the disk sometimes with a faint piceous cloud.

Head with rather shallow frontal furrows, diverging a little behind, mentum with the lobes strongly rounded, the epilobes narrow, forming a slight tooth on each side at apex, the tooth bifid but not deeply cleft, a good deal shorter than the lobes, a pair of setæ beneath it, submentum 4-setose, the inner pair of setæ much shorter than the outer pair; eyes very large and prominent, joints 7 to 10 of the antennæ only a third longer than wide, surface impunctate. Prothorax convex, a seventh wider than head, a fourth wider than long, base arcuate, its sides oblique, a fourth wider than apex, sides narrowly bordered, gently rounded on the front half, then straight to the base, hind angles somewhat obtuse though sharp, sometimes projecting slightly laterally, with a rudimentary carina, front seta at apical third, hind one on the angle, median line rather fine, not reaching extremities, basal foveæ short but moderately deep, hind transverse impression distinct though shallow, basal area slightly depressed, finely and vaguely punctate, with some slight longitudinal striation.

Elytra convex, very little wider than prothorax, rather more than twice as long as wide, 9-striate, the striae finely and vaguely punctate, moderately impressed on the disk only, 1 and 5 reaching or nearly reaching apex, 2 to 4 terminating before apex, 6 and 7 much earlier, at which point 5 bends outwards, 8 rather deeper than the rest, joining 9 well behind shoulder, intervals nearly flat, 3 with four equally spaced pores, the two front ones adjoining stria 3, the two hind ones adjoining stria 2 Microsculpture isodiametric, fairly distinct on the elytra, barely visible on the head and prothorax
Last ventral segment ♀ as in *Pogonus bitor*

Length, 4.5-5.25 mm

Distribution. SIND Karachi (T R D Bell)

Type in my collection

Mr. Bell's note reads "on tidal sand under wood"

Note—In Bull Mosc 1878, II, p 80, Chaudoir writes "I can see no difference between *Syrdenus fulvus* Baudi and a specimen coming from Bombay, which has been sent to me by Mr. de Castelnau" In his Monograph Chaudoir tells us that he could discover hardly any character to distinguish *S. fulvus* Baudi (Berl Ent Zeitschr 1864, p 206) from *S. grayi* Wollaston (Ann Mag Nat Hist (3) ix, 1862, p 43), but Mr V Lutshnik (Ann Mag Nat Hist (10) xi 1933, p. 690) says that the latter species may be distinguished by the presence of a minute seta on each side in the front angle of the prothorax, a character which I have confirmed by an examination of the type It would appear that Chaudoir's specimen, alleged to come from Bombay, might be an example of *fulvus* or *grayi*, which are found on the shores of the Mediterranean and Red Sea, and in view of this uncertainty, and the fact that I have seen neither Chaudoir's nor any similar Indian example, it seemed best to exclude the species here The coasts of India appear to have been little explored hitherto by entomologists, and probably much remains to be discovered when the sea-shores are more systematically examined.

Genus DIPLOUS.

Diplous Motchulsky, Kaf Russ 1850, t x, Chaudoir, Essai monographique sur le groupe des Pogonides, Ann Soc Ent Belg xiv, 1871, p 49, Bates, Trans Ent Soc Lond 1873, p 294
Platidius Chaudoir, Ann Soc Ent Belg xiv, 1871, p 51, Bates, Trans Ent Soc Lond. 1873, p 295

TYPE, *Diplous sibiricus* Motchulsky. (Siberia)

Head with deep, nearly parallel, frontal sulci, neck deeply constricted at a little distance behind eyes, which are moderately prominent and a little removed from the buccal fissure, the

hind supraorbital pore distant from eye, genæ fairly conspicuous; both labrum and clypeus faintly emarginate in front, the former sexsetose, the latter bisetose, clypeal suture very faint, mandibles fairly stout; ligula wide, rounded at apex, with two very closely placed setæ at the middle of the front margin, paraglossæ free at apex and extending a little beyond the ligula, mentum deeply emarginate, with a deeply cleft tooth in the emargination, submentum with a seta on each side, maxillæ with the outer lobe two-jointed, the inner one hooked at apex and provided with an inner row of bristles, palpi rather small, truncate at apex, the last two joints approximately equal, antennæ filiform, joint 1 stout, quite twice as long as 2, 3 a half longer than 1, the rest about equal in length to 1

Prothorax cordate, moderately convex, the sides bordered

Elytra rather flat, elongate-ovate, the sides with hardly a trace of sinuation before apex, no basal border, 9-striate, the striae more or less punctate, a scutellary striole present, stria 8 joining 9 behind the shoulder.

Venter. in the apical segment ♀ the two setæ on each side are placed close together near the margin.

Legs · meso- and metatarsal joints carinate on the outer side, joint 4 deeply emarginate, claws smooth.

Range Tibet, Siberia, Japan, North America

These insects are found on the banks of streams and mountain torrents, sometimes at high altitudes Nothing seems to be known of their life-history

493 *Diplosus nortoni*, Andr [Plate II, fig 8]

Diplosus nortoni Androwes, Trans Ent. Soc Lond. 1930, pp. 4 and 14

Colour black; apex of palpi ferruginous

Head convex, with deep, uneven, frontal foveæ, diverging slightly behind and reaching a little beyond mid-eye level, clypeal suture obsolete, genæ oblique, a deep, faintly punctate constriction not very far behind eyes, which are only moderately prominent; mentum with a short bifid tooth; pilpi slender, antennæ reaching basal third of elytra; surface smooth, a few faint striae near eyes *Prothorax* moderately convex, cordate, a fourth wider than head and nearly a third wider than long, base slightly emarginate at middle, apex truncate, sides with a fine reflexed border, well rounded in front, sinuate at a fifth from base, a seta on hind angle and another rather before middle, hind angles right and sharp, median line impressed at middle, front transverse impression rather slight, hind one a little deeper, basal foveæ small, deep and rounded, a little removed from both sides and base,

middle of base, lateral channels, and front transverse impression rather finely and lightly punctate, the punctures more densely placed around and in the basal foveæ, disk vaguely transversely striate. Elytra flat, elongate-ovate, and widest just behind middle, three-fourths wider than prothorax and as much longer than wide, sides very gently rounded, not sinuate before apex, punctate-striate, the punctures visible only on basal half of disk, the striae moderately impressed on disk, rather lightly at sides, 1 and 2 joining at base, 1, 5, and 8 all reaching apex, intervals somewhat convex on disk, nearly flat at sides, 3 with three equally spaced pores, adjoining stria 3, marginal series subinterrupted at middle, the pores very small. Microsculpture of the elytra formed by isodiametric meshes, the head and prothorax practically without any *Sterna* metepisterna and sides of sterna punctate. Venter with traces of puncturation only at sides of base.

Length, 9 5-11 mm

Distribution TIBET Tashidzom, 14,500 feet (R W G Hingston)

Type in the British Museum

The species described above has not the facies of the circum-Mediterranean species, but its main characters are the same, though the neck constriction is placed rather further back.

Although *D. przewalskii* Sem (Hor Soc Ent Ross xxii, 1889, p 356) is also found in Tibet, I have not introduced it here because Koko-nor, the only known locality, is so remote from the Indian region.

Genus LISSOPOGONUS.

Lissopogonus Androwes, Ann Mag Nat Hist (9) xii, 1923, p 213

TYPE, *Lissopogonus glabellus* Andr (India)

Body winged, glabrous

Head with deep furrows, bounded on each side by a carina, neck moderately constricted at some distance behind eyes, which are only moderately prominent and not far removed from buccal fissure, the hind supraorbital pore placed far back, just outside the end of the lateral carina, labrum moderately emarginate, sexsetose, clypeus bisetose, mandibles stout, sharply hooked at apex, toothed at base, mentum with a short simple tooth, the lobes rounded outwardly at base and thence nearly straight to the slightly rounded apex, epilobes wide, forming a tooth on the inner margin of each lobe but not nearly reaching apex, ligula bisetose at apex, the two setæ, though adjacent, separated from each other, paraglossæ extending some little way beyond the ligula, maxillæ with the outer lobe two-jointed, inner one very sharp, fringed with bristles, and hooked at apex; maxillary palpi

glabrous, the apical a half longer than the penultimate joint, last two joints of the labials of equal length; antennæ stout.

Prothorax cordate, convex, the front lateral seta far forward, the hind one placed before the angle

Elytra oval, convex, stria 1 more or less impressed, the other striæ obsolete, but 8 and a slight apical striole are visible close to apex, no scutellary striole, marginal channel with few and inconspicuous pores, no microsculpture

Sterna. pro- and mesosterna deeply furrowed, metasternal process strongly bordered between the mesocoxæ Vener with segments bordered and bisetose, apical segment ♀ with all four setæ placed near the margin. Legs rather short, tarsal joints short, glabrous above, not furrowed, joint 4 emarginate, ♂ protarsi with hardly dilated joints

Range India, Laos, Java.

Nothing is known regarding the biology.

494. *Lissopogonus glabellus*, Andr. [Plate II, fig 4.]

Lissopogonus glabellus Andrewes, Ann Mag Nat Hist (9) xii, 1923, p 214, id Ent Month Mag. 1926, p 68

Colour black, surface very shiny; joints 1 and 2 of antennæ, and a rounded apical spot on each elytron, covering approximately intervals 3 to 8, reddish, venter piceous; legs ferruginous, with the middle of femora and tibiæ sometimes piceous

Head moderately convex, frontal furrows deep in front, parallel, genæ sloping very gently backwards, clypeal suture just visible, a fine ridge running back on each side from inner margin of eye, parallel with and terminating at the same level as the frontal ridge, surface smooth, finely punctate in the neck constriction, and with a few punctures on each side of front, palpi truncate at apex, antennæ reaching basal fourth of elytra, slightly dilated towards apex, joint 1 stout, twice as long as 2, 3 three times as long as 2, the rest as long as 1. *Prothorax* about a seventh wider than head and as much wider than long (not "much wider," as in the original description), sides of base slightly oblique, sides gently rounded, sinuate at about a sixth from base, hind angles sharply rectangular, projecting a little laterally, with a slight carina (as often in *Bembidion*), median line deep, very deep and wide at base (as in the *cameroni* group of *Bembidion*), basal sulcus deep, containing three large pores on each side, of which the outside pore is largest and extends to base, surface smooth and polished. *Elytra* five-sixths wider than prothorax, two-fifths longer than wide, border forming a slight angle at shoulder, basal border vague and irregular, with one or two large pores on each side; stria 1 shallow behind, deepening and curving outwards in front close to base, the other striæ

just visible under a strong lens as rows of minute punctures, a single dot at pore on the site of interval 3 just before middle
Length, 4.75-6 mm., *width*, 1.8-2.3 mm.

Distribution: United Provinces: West Almora, Tanakpur, Haldwani, Sard, River Gorge, and Sirju Valley (all *H. G. Cherrapunji*), Kali Gal, Dabhiwala, and Dong River (Dehra Dan), Arni Gal (Mussoorie), and Lachiwala (Siwalik Hills) (all *M. Garhwal*); Brasti, Gopaldhara, Namtoo (*H. Darjeeling*); Shikra, Birik, and Gelle Khola in the Tista Valley (*H. Sikkim*). As am. Rotung (S. W. Kemp) Laos.

Type in my collection

The examples from Laos are a little smaller and darker than the Indian specimen. Only one other species is known, viz., *L. porosus* Andr., from Java.

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All names printed in italics are synonyms

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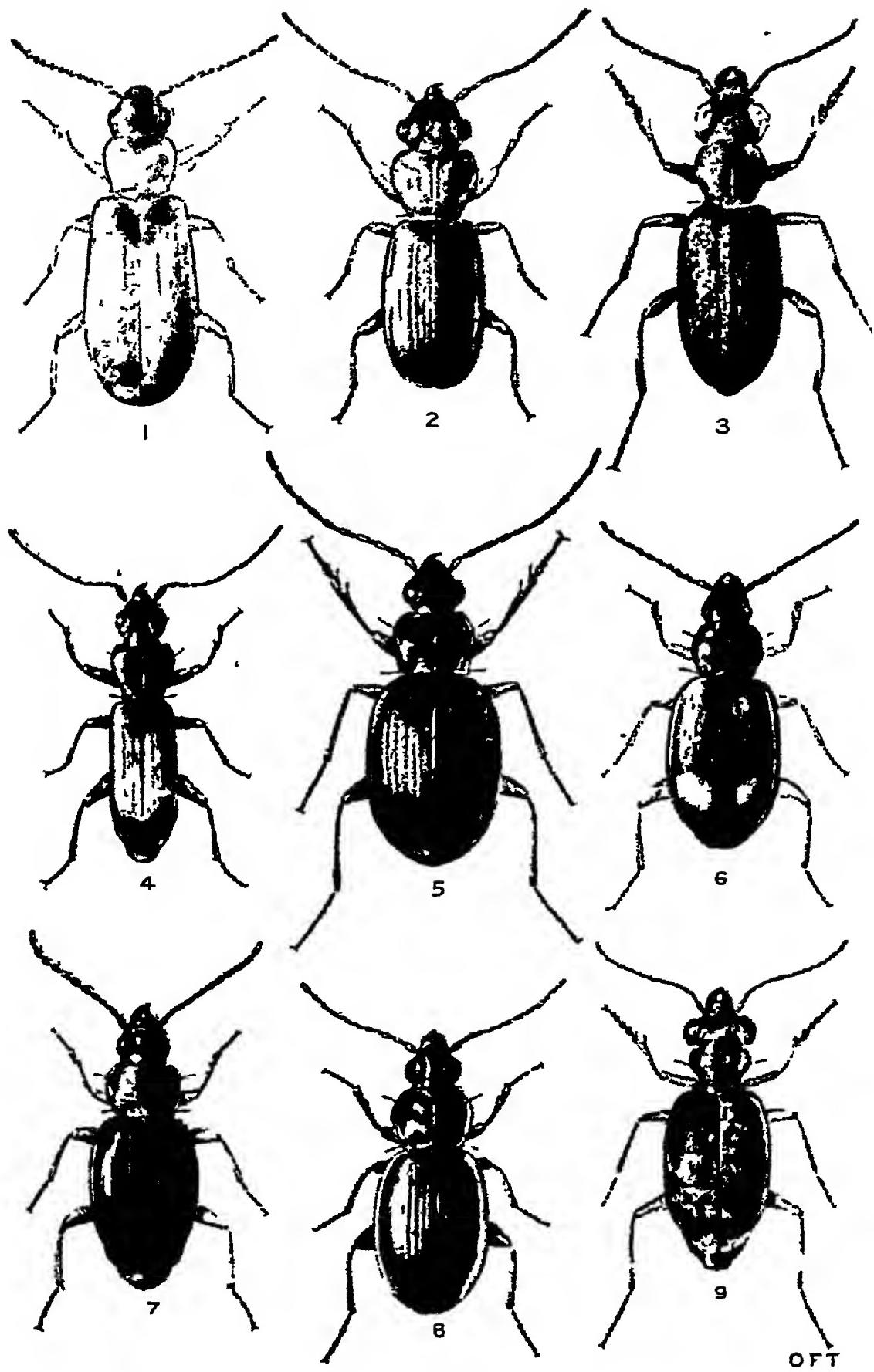
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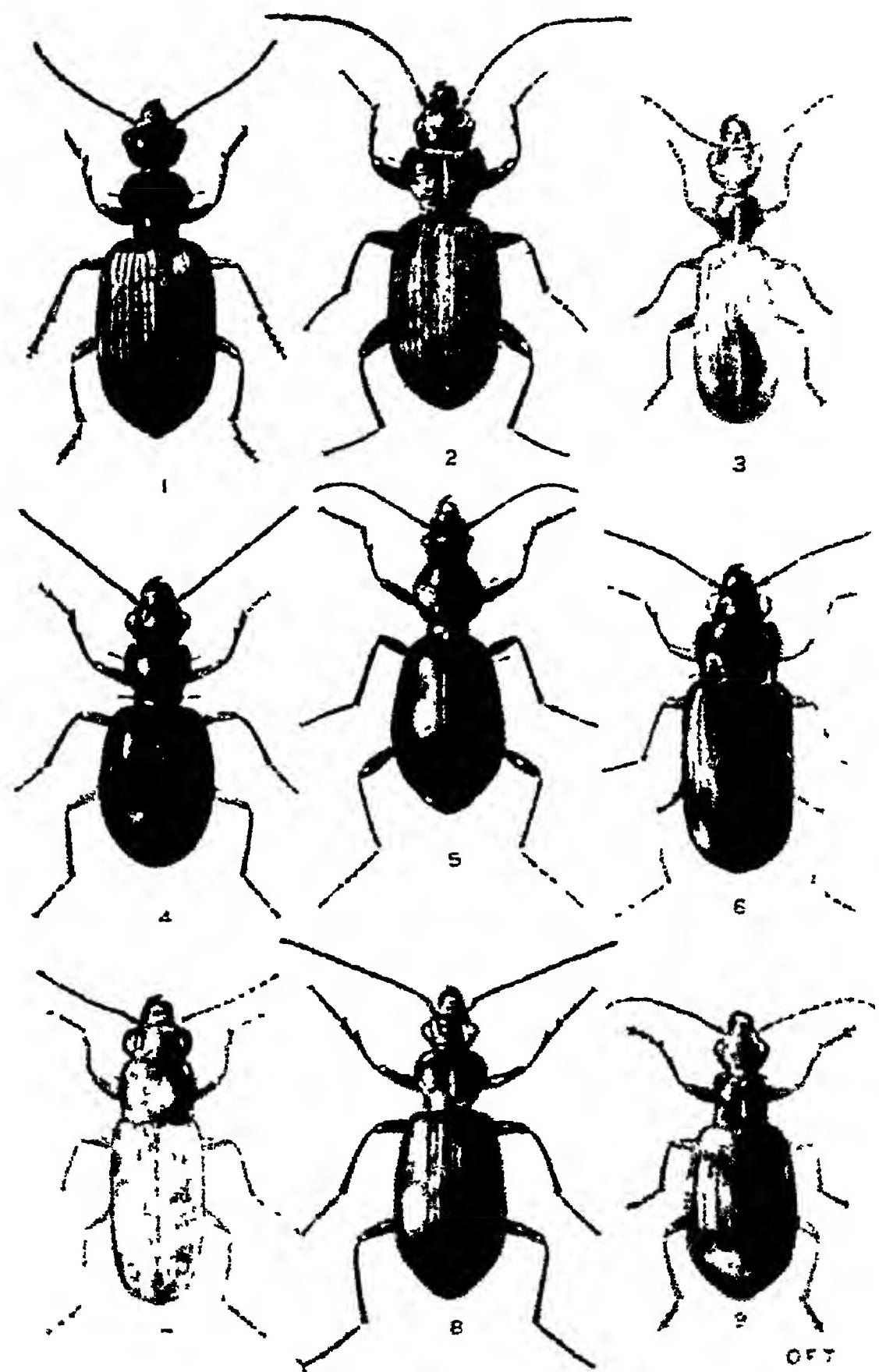
EXPLANATION OF PLATE I

- Fig 1. *Lymnastis pullulus* Motch
2 *Perileptus birmanicus* Jeann
3. *Asaphidion triste*, sp nov
4. *Perileptus microps*, sp. nov.
5 *Agonotrechus iris*, sp nov
6 *Tachys octostratus* Net
7 *Trechus beesoni* Jeann
8. „ *indicus* var *macroderus* Jeann
9 *Asaphidion formosum*, sp. nov.



EXPLANATION OF PLATE II.

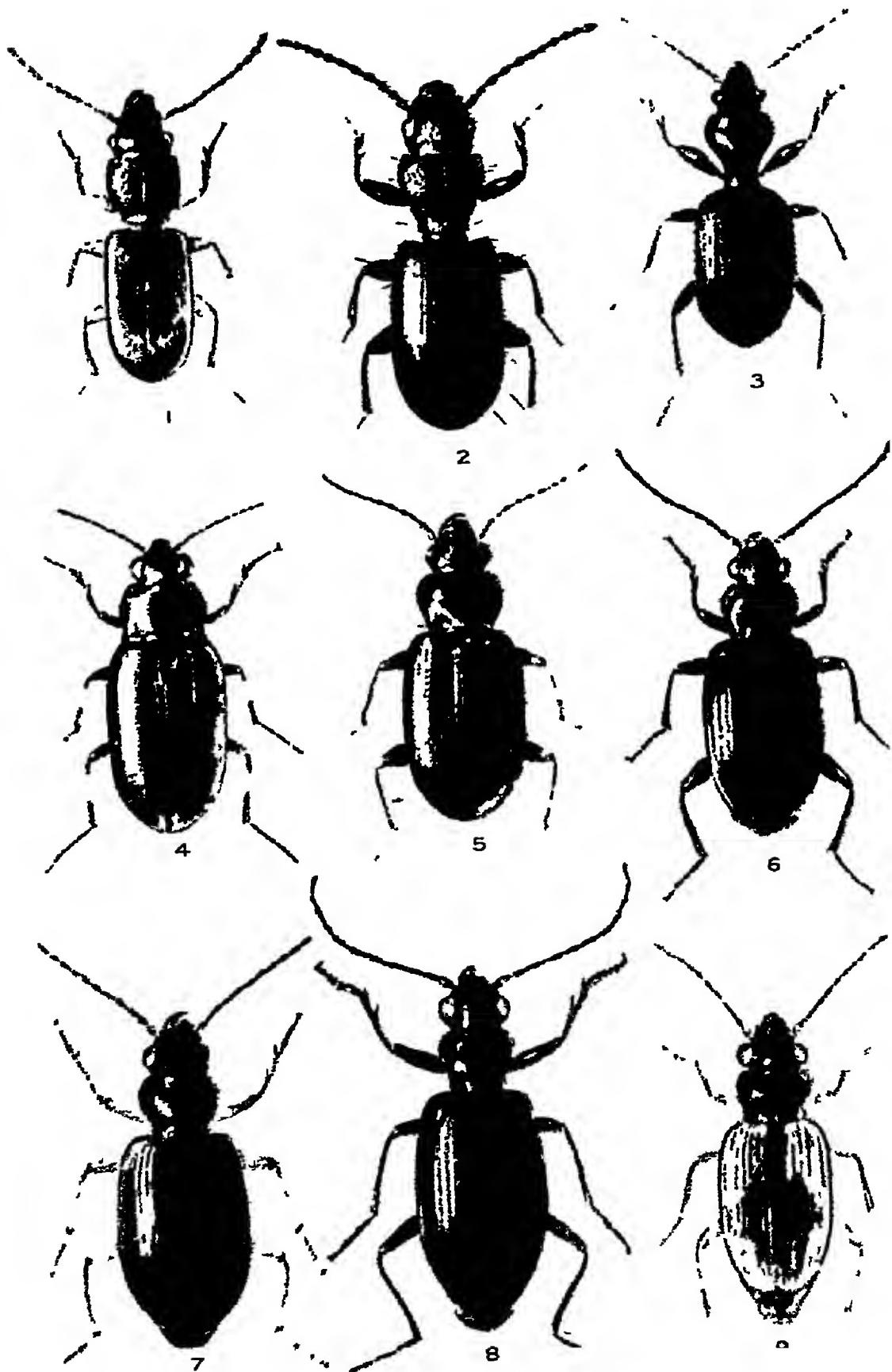
- Fig. 1 *Hexagonia terminalata* Kirby.
2 *Melænus piger* Fabr.
3. *Hexagonia uninotata*, sp nov
4 *Lissopogonus glabellus* Andr.
5. *Broscosoma ribbei* Putz
6. *Pogonus birói* Csiki
7 *Syrdenus pallens*, sp nov.
8. *Diplous nortoni* Andr.
9. *Dinopelma leptaleum* Andr.



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EXPLANATION OF PLATE III.

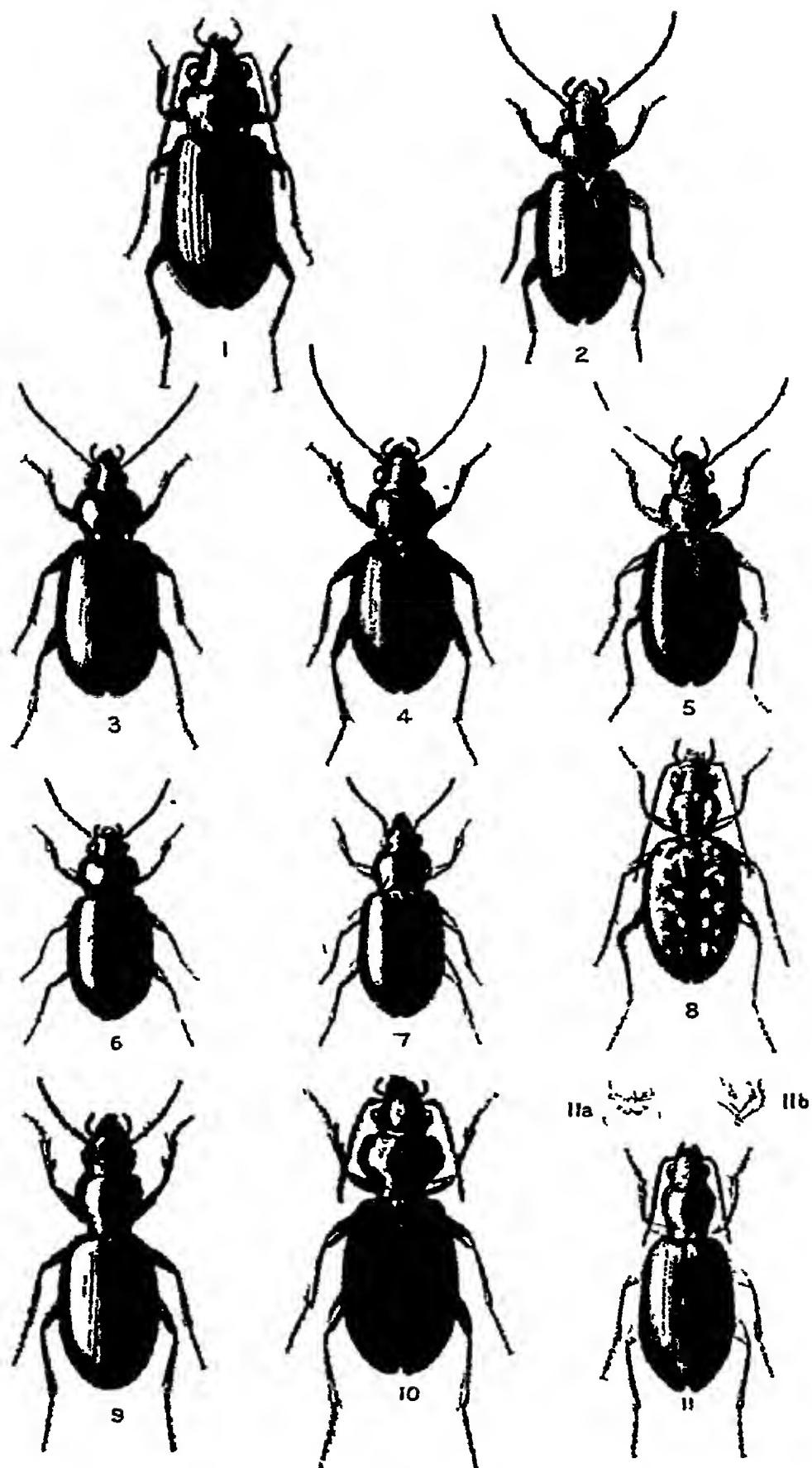
- Fig 1 *Cymbionotum helferi* Chaud.
2. ,, *minax*, sp. nov.
3. *Apotomus hirsutulus* Bates
4 *Bembidion luniferum* Andr
5 ,, *loricatum* Andr
6 ,, *kara* Andr
7 ,, *compactum* Andr
8 ,, *regale* Andr.
9 ,, *notatum* Andr



EXPLANATION OF PLATE IV

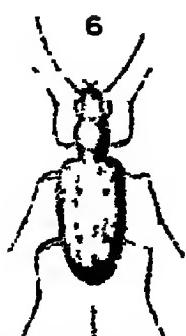
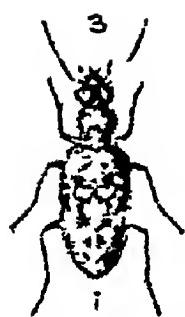
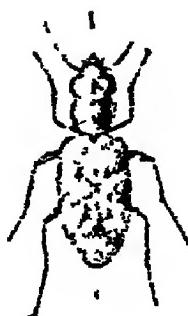
- Fig. 1. *Bembidion pluto* Andr.
2 ,, *gagates* Andr.
3. ,, *ladas* Andr.
4. ,, *orinum* Andr. *
5 ,, *babaulti* Andr.
6 *Tachys blandus* Andr
7 ,, *babaulti* Andr.
8 *Asaphidion championi* Andr
9 *Chætobroscus anomalus* Chaud
10 *Craspedonotus himalayanus* Sem
11 *Axonya championi* Andr
 a Labium
 b Right maxilla (seen from below).

* Originally, by an inadvertence, this figure appeared as an illustration of *B. aquilum* Andr.



EXPLANATION OF PLATE V.

- Fig. 1. *Asaphidion obscurum* Andr.
2. ,, *cuprascens* Andr.
3. ,, *griseum* Andr.
4. ,, *viride* Andr.
5. ,, *indicum* Chaud.
6. ,, *substriatum* Andr.
7. ,, *ornatum* Andr



W.W. Schaus del.

